STAR STAR BRAND



BRASS & COPPER CO.



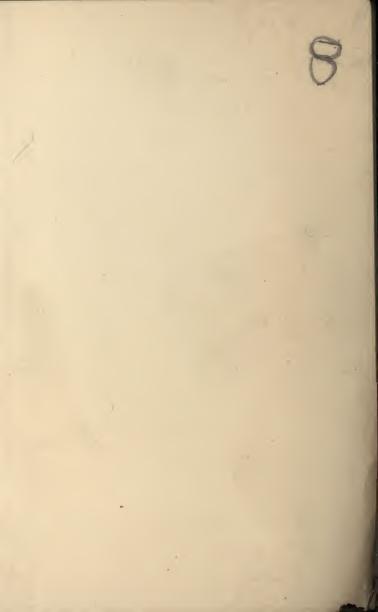
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WITH PRIVATE BRANCH EXCHANGE CONNECTING ALL DEPARTMENTS

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GEO. DAVIDSON, SECRETARY.

J. R. VAN BRUNT, TREAS.



U.T.HUNGERFORD BRASS & COPPER CO.

497-505 Pearl Street, 486-492 Pearl Street, 37-43 Park Street,

NEW YORK.

Brass, Bronze & German Silver.

Tobin Bronze.

Phosphor Bronze.

Sheet & Bar Copper

> Yellow Metal.

Zinc.

Seamless Tube.

Brass Cittings.

Brazed and Iron Lined Tube.

Electrical Goods.

Rivets and Burs.

Tacks and Pails.

Hardware.

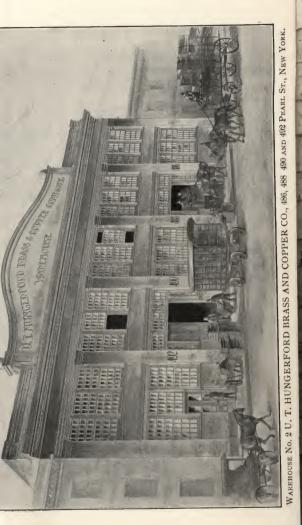
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Brass, Bronze & German Silver.

Tobin Bronze.

Phosphor Bronze.

Sheet & Bar Copper

Yellow Metal.

Zinc.

Seamless Tube.

Brass Pittings

Brazed and Iron Lined Tube.

Electrical Goods.

Rivets and Burs.

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Weights &

NOTICE.

For the convenience of the trade we carry in stock in our N. Y. Warehouses, ready for shipment on receipt of orders, an assortment of



"STAR BRAND"



Brass, Copper, Bronze, Yellow Metal, German Silver, Etc.,

AGGREGATING

OVER 2,000,000 POUNDS.

and comprising a large variety of shapes and sizes.

If you will order regular Stock Sizes, as specified herein, we can, as a rule, ship same the day order reaches us.

Should you, however, need other than Stock Sizes, requiring special manufacture, we can furnish from the Mill with reasonable promptness.

In ordering by telephone, call

4510 WORTH,

our private branch exchange, connecting all departments, and ask for department covering goods required, thereby obviating unnecessary delay.

In ordering by telegraph, use our code, thereby saving expense. See pages 273 to 283.

U. T. HUNGERFORD BRASS & COPPER CO.

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Preface.

The contents of this catalogue are classified in separate departments, thereby providing our friends in the trade with a concise and complete price list of all classes of goods, together with a list showing the various sizes carried in stock ready for prompt shipment.

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DEPARTMENT No. 1.

Brass, Bronze and German Silver

Rolls, Sheets, Wire and Rod.

Brass, Bronze & German Silver.

Tobin & Bronze.

Phosphor Bronze.

Sheet & Bar Copper

Yellow Metal.

Zinc.

Seamless Tube.

Brass Fittings.

> Brazed and Iron Lined Tube.

Electrical Goods.

Rivets and Burs.

Tacks and

Hardware.

Manufaction Material

Weights &

Special Notice.

When prices are quoted based on freight allowance, it is with the understanding that the order shall be for not less than 100 pounds in one shipment, unless otherwise specified. Shipments of less than 100 pounds are invariably subject to a reasonable charge for boxing and cartage to receiving station of transportation company.

All contracts are made contingent upon strikes, fires, accidents, or causes beyond our control.

Prices submitted by us or our representatives are (unless otherwise agreed to in writing) subject to change without notice.

U. T. HUNGERFORD BRASS AND COPPER CO.

RULES TO BE OBSERVED IN ORDERING

SHEET BRASS, BRONZE, and GERMAN SILVER.

BRASS, BRONZE AND GERMAN SILVER, in rolls and sheets are numbered by Brown & Sharpe's Gauge. When ordering, state thickness, width and temper required. If you have no Gauge, send a small sample which will answer for the Gauge number.

In ordering **Spinning** or **Drawing Brass**, a small sample of the metal required or information as to use for which it is intended, will enable us to execute order with metal to give the best results.

By following the above rules the necessity of writing for information will be avoided and enable us to execute orders promptly.

The terms "High" and "Low" refer to the quality of the Brass and not the temper.

Low Brass contains a larger percentage of Copper.

Charges for making Special Dies, Tools, etc., will not convey ownership unless by special written agreement.



18 U.T.	HUNGI	ERFORI	D BRASS AND COPPER C	0.
TRADE MARK. STAR BRAND	DATE	In. 40	Special Price nor L'ess than 58 cents over Base.	
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Price on application. Extra Quality Brazing, Spinning and Spring Brass, 2 cents per 16. more than Common High Brass. For Polishing on one side, 40 cents per square foot additional; on both sides, double this price, Brazing, Spinning and Spring Brass, I cent per 16. more than Common High Brass. Patent Leveled Engravers' Sign Brass, long random length or cut to exact length. For Cutting to exact or approximate lengths add 7 cents per 16.

e which will represent actual metal used B. & S. Ga. and thinner, 6 cents per added. All segments, pattern sheets, and irregular shape blanks will be than at full price, accounting for full amount of scrap made, with Embossed metal, 4 cents. per Ib. extra.

thicker than No. 10 B. & S. Ga., 10 cents per Circles 12 inches dia, and smaller cut from above metal of proportional conditional Circles 12 inches dia, and smaller cut from above metal of proportion additional.

Metal between gauges takes price of next thinner gauge.

Circles over 12 inches diameter Special prices.

additional.

per Ib. Shorter than 1 inch, special All Metal heavier than No. 6, B. & S. gauge, listed and 2 in. to 4 in.... 10¢ 1 in. to 2 in......12¢ fths, add to the above: 4 in. to 6 in..... 44 50 80 80 6 in. to 9 in.8¢ Dout (6 part 9 in. to 24 in ... 24 in. and over. id name Sawed Meter % inch

1¢ per 1

Over 1/2 in, to 2 in, inclusive, Nos. 12 to 28 incl.

SLITTING

in, and narrower, Nos. 12 to 28 incl., not

less than.....

Over ½ in, to 2 in, inclusive, Nos. 29 to 32 incl.

in. and narrower, Nos. 29 to 32 incl., not less

Over 1/2 in. to 2 in. incl., No. 33 and thinner ...

than

in. and narrower, No. 33 and thinner, not

(Drawn Strips are all metal drawn in dies, thinner than No. 8, charged as sawed metal, whether slit or sawed per 1b. above price of Slit Brass. (Drawn Strips a & S. and thicker, listed and sold as rectangular rod.) th, above price of Slit Brass. above per pound additional..... B. 46 Drawn Strips S. Gauge; No. 8,

-

Metal, cut to particular lengths, add to

less than.....

Tobin Bronze. Phosphor Bronze. Sheet & Bar Copper Yellow Metal. Zinc. Seamless Tube. Brass Hittings Brazed and Iron Lined Tube. Electrical Goods. Rivets and Burs. acks and Hardware. 8



"STAR BRAND



HALF HARD BRASS SHEETS

24 X 48 AND 30 X 60 INCHES

PRICE LIST.

THICKNESS	24 x 48 Advance over Base.	30 x 60 Advance over Base,
% to 3 Thick No. 8 to 20 B. & S., Idc. 21 24 25 and 26	19 Cents 18 19 20	28 Cents 27 28 29
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"STAR BRAND"

Soft Sheet Brass.

IN ROLLS.



EACH ROLL CONTAINS FROM 50 TO 75 LBS.

SIZES MARKED X CARRIED IN STOCK.

Width			N	un	be	rs	bу	B	rov	vn	&	Sha	arp	e's	G	au	ıge			
in Inches	14	16	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	36
6		X	X	X	X	X	X	Х	Х	X	X	X	X	X	X	X	X	X	X	X
8	х	Х	X	X	X	X	х	X	х	х	х	х	х	x	х	х	X	х	х	x
9	-	_	-	-	x	_	X	x	x	x	x	X	_	x	-	_	_	Γ	-	-
10	х	-	X	x	х	X	x	X	x	x	x	X	x	Х	x	X	X	x	X	x
12	х	x	х	x	Х	x	X	x	x	Х	x	x	x	x	X	X	X	x	X	X
14	Х	_	x	x	X	x	X	X	x	X	X	X	X	X	X			X		x

Special Widths or Circles of Any Temper and Gauge Furnished Promptly from Mill.

Our Sheet Brass is made from Selected Copper and High Grade Spelter, and quality can be fully depended upon.

We give special attention to Drawing and Spinning Brass, quality of which is guaranteed equal to that furnished by any manufacturer in the country.

We make a large variety of Fancy pattern Embossed Brass suitable for special fancy brass work, chandelier work, etc.

Tobin % Bronze. Phosphor Bronze. Sheet & Bar Copper Yellow Metal. Zinc. Seamless Tube. Brass Bittings. Brazed and Iron Lined Tube. Electrical Goods. Rivets and Burs. Tacks and Hardware. Conting Vicigina &



"STAR BRAND" Hard and Half Hard, High Sheet Brass.



IN FLAT SHEETS.

6, 8 10, 12 and 14 in. wide x 72 in. long, Nos. 3 to 26 B. & S. Gauge.

IN ROLLS.

6, 8, 10, 12 and 14 in. wide, Nos. 16 to 28 B. & S. Gauge.

Soft or Annealed Brass.

IN FLAT SHEETS.

6, 8, 10, 12 and 14 in. wide by 72 in. long, Nos. 3 to 20, B. & S. Gauge.

Spring Sheet Brass.

IN ROLLS.

8 in. wide, Nos. 14 to 34 B. & S. Gauge.

Soft Low Brass.

FOR SPINNING, IN ROLLS.

6, 8, 10, 12 and 14 in. wide, Nos. 17 to 32 B. & S. Gauge.

Hard Rolled Bronze.

FLAT SHEETS.

6 in. wide, Nos. 8, 10, 14 and 16, B. & S. Gauge. In Lengths of 72 Inches.

Soft Bronze.

FOR SPINNING, IN ROLLS.

8 and 12 in. wide, Nos. 14 to 26 B. & S. Gauge.

Soft German Silver.

IN ROLLS.

18%-6 in wide, Nos. 17 to 36 B. & S. Gauge.

ORDERS FOR WIDTHS, GAUGES AND QUALITIES NOT MEN-TIONED ABOVE, SHIPPED FROM MILL PROMPTLY.



"STAR BRAND"
HARD AND HALF HARD
HOOP Brass.
IN COILS.



3% in. to 2 in. wide, Nos. 16 to 26 B. & S. Gauge.

Hard and Half Hard Sawed Brass. IN LENGTHS FROM 6 TO 12 FEET.

- 1_{16}^{1} inch thick x $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$. $\frac{7}{2}$, $\frac{3}{18}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, $\frac{1}{1}$, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{6}{6}$ and $\frac{8}{10}$ in wide.
- $\frac{3}{3}$ inch thick x $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, $\frac{1}{18}$, $\frac{11}{8}$, $\frac{11}{4}$,
- 1/8 inch thick x 1/4, 1/8, 1/2, 1/8, 1/4, 1/4, 1/4, 1/4, 2.2/2, 3, 3/2, 4, 5, 6, 8, 10, 12 and 14 in. wide
- ^a/₁₆ inch thick x 3/8, 1/2, 1/8, 1/4, 1/4, 1/4, 2, 21/2, 3, 3 1/2, 4, 5, 6, 8, 10, 12 and 14 in. wide.
- ¼ inch thick x ¾, ½, ¾, ¾, ¼, 1, 1¼, 1½, 2, 2¼, 2½, 3, 3½, 4, 5, 6, 12 and 14 in. wide.
- 3/8 inch thick x 3/4, 1, 11/4, 11/2, 2, 21/2, 3, 31/2, 4, 5, 6, 8, 10, 12 and 14 in. wide.
- 1/2 inch thick x 1, 11/4, 11/2, 2 and 21/2 in. wide.

"STAR BRAND" Spring Brush Copper.

IN ROLLS.

8 in. wide, Nos. 20 to 36 B. & S. Gauge.

ORDERS FOR SIZES AND THICKNESSES OTHER THAN MENTIONED
ABOVE SHIPPED FROM MILL PROMPTLY.

Tobin 4.

Phosphor Bronze.

Sheet & Bar Co

Yellow Metal.

Zinc.

Seamless Tube.

Brass Mittings.

> Brazed and Iron Lined Tube.

Electrical Goods.

Rivets and Burs.

Tacks and Nails.

Hardware.

Roofing Material

Weights &

or other



"STAR BRAND"

Engravers' Sign Brass.





IN SHEETS UP TO 40 INCHES WIDE.

A specialty is made of Brass Plates and Sheets, suitable for Engravers' Plates, Sign Sheets, Galley Plates and all other purposes, where an absolutely flat sheet is required, free from Buckles, Pitts, Blisters and other imperfections.

Sizes of carried in Stock, ready for immediate shipment:

No. 15, B. & S. Gauge.

8, 10, 12, 14, 16, 18, 20, 22, 24, 26 and 30 inches wide. In lengths from 10 to 15 feet.

BRONZE METAL AND GERMAN SILVER. in Plates, Sheets, Rolls, Circles, Bars and Strips.

ORNAMENTAL or FANCY SHEET METAL. STANDARD AND NEW DESIGNS.

DRAWN STRIPS.

FOR CHANDELIERS, GRILLE, AND OTHER WORK.

Brass Circles, Copper Circles, Zinc Circles, Low Brass Circles, Bronze Metal Circles, and German Silver Circles,

FOR SPINNING AND STAMPING.



R

"STAR BRAND"

Platers' Metal.

IN ROLLS. 6 in. wide.



RASS Nos. 40 B. & S. G. -4/0, 3/0, 2/0, and 0. " 40 " —4/0, 3/0, 2/0, and 0. REIDE . ERMAN SILVER " 4/0, 3/0, 2/0, and 0,

"STAR BRAND"

Soft Oreide.

IN ROLLS.

in. wide-Nos. 18, 19, 20, 22, 24, 25, 26, 27, 28, 29 and 30 B. & S. Gauge.

"STAR BRAND"

Soft Copper in Rolls.

CONTAINING ABOUT 75 LBS. EACH. SUITABLE FOR

SPINNING, STAMPING DRAWING, ETC.

2 in. wide-Nos. 18, 20, 22, 24, 26 and 28 B. & S. Gauge. " 18, 20, 22, 26 and 28 18, 20 and 22

18, 20, 22 and 24 24

RDERS FOR SPECIAL SIZES NOT MENTIONED ABOVE HIPPED FROM MILL WITH REASONABLE PROMPTNESS.

Tobin Bronze.

Phosphor Bronze.

Sheet & Bar C

Yellow Metal.

Zinc.

Seamless Tube.

Mittings.

Brazed and Iron Lined Tube.

Electrical Goods.

Rivets and

Facks and

Hardware.



Price List of "STAR BRAND" German Silver.



		I	DATE		• • • • • •						
			1	INS	HERTS.	AND ROLLS					
		I	BROWN	SHA	REB'S G	AUGE THE	ST	AND	ARI	٥.	Base
	4 per	cent,	owe	in t	o and	including	8	in.	to	No.	Price
	6	"	10	2/4	\$0.	16	8	**			20,
	8	1	-1	2 "	3	8 -	8	64		+6	20,
	10	1	1	247		às.	8	8.0		44	20,
	12	-	1"4	2 "	-	14	8	١.		**	20,
4	П	1	13	2 "		• •	8	14		**	20,
<	AL.	1	5 de.	2		4.5	8	44			20,
	38	" Le	"	2		**	8	4.6			20,
	20	3	"	2 "			8	44		4.4	20,

Sizes over 2 in, to 8 in, inclusive up to and including 20 B. & S. Gauge take base prices, which vary according to percentage of nickel in mixture, and will be quoted upon application.

Advance 2 cents per pound for each additional inch in width above 8 inches, and 1 cent per pound for each number thinner than Nos. 20 to 30 inclusive, and 2 cents per pound per number thinner than Nos. 30 to 36 inclusive. Prices for special percentage of nickel, not mentioned above, will be furnished upon application.

 German Silver thinner than No. 36 is "Plater's," Metal as follows:

 37 to 40 inclu.
 $\frac{1}{0}$,=.0025
 $\frac{2}{0}$,=.002
 $\frac{3}{0}$,=.0015
 $\frac{4}{0}$,=.001

 \$1.62
 $\frac{1}{8}$ $\frac{1}{2}$ $\frac{2}{2}$ $\frac{2}{2}$ $\frac{2}{2}$ $\frac{2}{2}$

German Silver cut to particular lengths, add to List, 15 cents per pound.

Silting German Silver, the same advances as for Slitting Brass, see page 19.

Sawed German Silver in Bars, Plates, or Ingots, 20 cents per pound more than the List.

German Silver Circles, 15 cents per pound additional to price of sheets required to cut them from,

Segments, Pattern Sheets, and irregular shapes, same advance as provided for on Brass.

All metal between gauges takes price of next thinner gauge.

RULES TO BE OBSERVED

in Ordering

BRASS, COPPER, BRONZE & GERMAN SILVER WIRE.

All Brass and Copper Wire carried in stock to No. 21, inclusive, is numbered by Stubs' Gauge; No. 22 and finer, by London Gauge. All orders, where the Gauge is not stated, will be filled accordingly.

The terms "High" and "Low" refer to the Quality of the brass and not the temper.

Low Brass contains a larger percentage of Copper.

When ordering Brass, Bronze or German Silver Wire, state whether Soft, Hard, or Spring Wire is wanted.

Hard Drawn Copper Wire and German Silver Wire for Electrical purposes are usually ordered by Brown & Sharpe's Gauge. If possible, denote Gauge by thousandths of an inch.

If parties ordering Wire have no gauge, a small piece may be sent, which will answer for the Gauge number.

By following these rules the necessity for writing for information will be avoided, and we will be enabled to execute orders promptly. Tebin Bronze.

> Phospho Bronze.

Sheet Bar Cr

> Yellow Metal.

Zinc.

Tube.

Brass Littings.

Electric

Rivets Burs.

Tacks an

Hardwar

Roofing Materi

> Weight: Measure



Price list of "STAR BRAND" Wire in Coils.



Brass and Copper Wire to No. 21 inclusive are numbered by Stubs' Gauge. No. 22 and finer by London Gauge. All orders in which the Gauge is not stated will be filed accordingly. When ordering Brass Wire, state whether SOFT, HARD or SPRING

WIRE is wanted. Extras over base price in cents per pound.

	price in cents per pot	THG.		
Brown & Sharpe's Gauge.	Old English or London Gauge.	Soft & Hard High Brass	Low Brass,	Commercial Bronze Gilding and Copper.
Smaller than ½ to 8 inc. Smaller than 8 to	Smaller than ¼ to 10 inc.	Spe	cial pri	
" 12 — .08081 " 13 — .07196 " 14 — .06408 " 15 — .05707 " 16 — .05082 " 17 — .04525 " 18 — .0403 " 19 — .086 " 20 — .03196 " 21 — .0285 " 22 — .0253 " 23 — .0226 " 24 — .0201 " 25 — .0179 " 25 — .0179 " 25 — .0179 " 27 — .0142 " 28 — .0159 " 29 — .0142 " 29 — .0143 " 30 — .040 " 31 — .009 " 31 — .009	Smaller than 10 to 12 inc	Base 1/2 1/2 1/2 2 3 4 4 4 5 5 7 9 12 115 119 22 25 8 32	Base 1/2 1/2 1/2 2 2 3 4 4 4 5 5 7 9 12 15 19 22 25 8 3 2	Base 122 15 18 28 39 5
33 — .0071. 34 — .0063. 35 — .0056. 36 — .005. 37 — .004450	36 — .0075 37 — .0065 38 — .00575 39 — .005 40 — .0045	36 41 47 53	36 41 47 53	45 54 67 1.02 1.22
" 39 Z .004 " 39 Z .00353 " 40 Z .00314	ENTS PER POUND A	77 1.07 1.77 2.37	77 1.07 1.77 2.37	1.42 1.72 2.97 5.47

SPRING-WIRE Z CENTS PER POUND ADVANCE.
W dIFENED WHER S CENTS PER POUND ADVANCE.
FLAT, SQUARE and HALF-ROUND WIRE 4 CENTS PER POUND ADVANCE on Round Wire of corresponding size. To determine price of Flat and
Half Round Wire add extra to price of Round Wire of a diameter equal to

Half Round Wire add extra to price of Abdulation measurement.

FANCY WIRE, not less than 10 CENTS PER POUND ADVANCE on Round Wire.

Wire straightened and cut, smaller than No. 11 B. & S. Gauge, 12 CENTS PER POUND ADDITIONAL. Same addition for cutting to exact length as rods. All Wire between gauges takes price of next smaller gauge.

PRICE FOR SPOOLING WIRE SEE PAGE 30.



"STAR BRAND"

Soft Copper Wire.

IN BUNDLES OF ABOUT 25 LBS. OF A SIZE.



38, 5 and 1/4 in., and all sizes from Nos. 3 to 21 Stubs' Gauge and from 22 to 36 London Gauge.

"STAR BRAND" High Brass Wire.

IN BUNDLES OF ABOUT 25 LBS. OF A SIZE.

Soft, all sizes f	rom	١.						 			 				 	10	to)	21.	Stubs'	Gu	age
66 66	4.4							 								22	to)	36,	London	l	**
Hard.	6 h							 			 				 	6	to)	21.	Stubs'		4.6
11 11	44		Ī		ì	ì			i	ì		Ĺ	ì	ì		22	to)	36.	Londor	1	4.6
Spring "	4.4															. 3	to)	21.	Stubs'		6 4
A Principal	4.6	:						 								22	to)	36,	London	1	4.4

Also a full assortment of

"STAR BRAND" BRASS AND COPPER WIRE ON

CONTAINING 1 LB., 1/4 LB. AND 1/4 LB. EACH.

						S12			
Soft C	opper.	sizes	fron	1	12	16	to 21	Stubs'	4.6
46	**	**				22			

HALF HARD FLAT BRASS WIRE.

ROUND EDGE In Bundles of about 25 lbs.

1/4 and 3/6 in. x 14 B. & S. Ga. and 3/8 in. x 12 B. & S. Ga.

Low Brass Brush Wire.

In coils of 5 lbs. each.

All sizes from 23 to 31 London Guage.

This wire is made from Selected Stock, has great tensile strength and is specially designed for Brush making.

SIZES NOT SPECIFIED ABOVE SHIPPED FROM MILL PROMPTLY.

Sheet & Bar C Yellow Metal. Tube. Brazed a Electrical Rivets and Burs. lails.

Tobin Bronze.

> Phosphor Bronze.

Zinc.

Seamless

Brass Mittings.

> Iron Line Tube.

Goods.

Tacks and

Hardware.



Price List of "STAR BRAND" German Silver Wire



Brown & Shabpe's Gauge the Standard. Prices in cents per pound.

(No. 10	Nos. 17 & 18	Nos. 19 & 20	No. 21	No. 22	No. 23	No. 24	No. 25	No 26
4%to and inc.	\$.53	\$.55	\$.58	\$.GO	\$.62	\$.65	\$.67	\$.70	\$.75
6	.56	.56 .58	.00	062	.64	.66	.69	.71 .72	.73
8 " "	.58	.594	.61 62	.64	.66	.68	.71 .72	.73 .74	.76
9 /	.59	5 .62	65	66	.68	.71	.73 .74	.76	.78
2)	064	.64	.68	.68 .71	$.71 \\ .72$.73 .76	.76 .78	.78 .80	.80
and the	.66	68	.71	.73 .76	.76 .78	.78	.80 .83	.83 .85	.88
5" ""	71 .72	73	.76 .78	.78 .82	.80	.83	.85	.88	1.00
311 11	.76 .78	.78	.80	.84	.88	.92	.96	1.01	1.06
) " "	.90	.96	1.03	1.08	.98 1.13	1.03	1.08 1.24	1.08	1.14
5 " "	1.20 1.54	1.28 1.56	1.33 1.63	1.36 1.68	$\frac{1.38}{1.74}$	1.42	1.50 1.93	1,62 2,05	1.73 2.10

18 Per Cent. German Silver Resistance Wire.

(By Brown Sharpe's Gauge.)

No. 30, 31, 32, 33, 34, 35, 36, 37, 38, \$1.75 \$1.95 \$2.35 \$2.60 \$2.95 \$3.65 \$6.50 \$11.50 \$18.00 Flat, Square and Half Round Wire, eight cents per pound more than Round Wire,

All Fancy Wires, not less than fifeen cents more than Round Wire. German Silver Rod, 50 per cent. more than Wire after including all extras.

German Silver Wire No. 4, B. & S. Gauge and thicker in coils, and all German Silver Wire when straightened and cut is German Silver Rod.

German Silver Rod No. 1¹, B. & S. Gauge and thicker cut to particular lengths same addition for cutting as Brass Rods. See page 31.

German Silver Rod No. 12, B. & S. Gauge and thinner cut to particular lengths same additions for cutting as Brass Wire. See page 28.

All wire between gauges takes price of next smaller gauge.

Prices for Spooling Brass, Copper and German

Silver Wire. Add to the list prices of Round Wire. On 1, 3, 4, 5, 6, 7, 8, 9, 10 pound spools. 9. 11, 10, 8, 5, At 12. 6. 4. 3 cents per pound.

Less than I pound spools, 24 cents per pound.



Price List of "STAR BRAND" ROD.



High Brass—Low Brass
Gilding—Commercial Bronze.

½ in. to 1 in. dia. incl. High Brass
1/2 " 1 " " LOV Brass
Over 1 in. to in. mam. inclusive add to above
base 3 cents
Collor than Winch not smaller than Winch:
High Brass Base Low Brass Gilding and Commercial Bronze "
Low Brass
Gilding and Commercial Bronze.
No. 8 B. & S. Ga. and less than ¼ in. dia., add to base for smaller than ½ in. 2 cts. per lb.
Smaller than 8 B. & S. Ga. to 11 B. & S. Ga. incl., add to base for smaller than ½ in. 6 cts. per lb.
Smaller than No. 11 B. & S. Ga., take price of Wire Straightened and Cut. See page 28.
Rods over 3 in. in diameter, special prices.
Hexagon, Octagon and Square, 2 cts. per lb. advance over Round Rods of corresponding size.
vance over Round Rods of corresponding size. Pectangular Half-round, Half-oval and Fancy
vance over Round Rods of corresponding size. Rectangular, Half-round, Half-oval and Fancy Shapes not less than 4 cts. advance over Round Rods.
vance over Round Rods of corresponding size. Rectangular, Half-round, Half-oval and Fancy Shapes not less than 4 cts. advance over Round Rods. Fancy Pattern Rods, 10 cts. per lb. advance over
Rectangular, Half-round, Half-oval and Fancy Shapes not less than 4 cts. advance over Round Rods. Fancy Pattern Rods, 10 cts. per lb. advance over Price of Round Rod of corresponding size. To determine price of Rectangular and Half
vance over Round Rods of corresponding size. Rectangular, Half-round, Half-oval and Fancy Shapes not less than 4 cts. advance over Round Rods. Fancy Pattern Rods, 10 cts. per lb. advance over
Rectangular, Half-round, Half-oval and Fancy Shapes not less than 4 cts. advance over Round Rods. Fancy Pattern Rods, 10 cts. per lb. advance over Price of Round Rod of corresponding size. To determine price of Rectangular and Half Round Rods, add extras according to List Price of Round Rod of a diameter equal to smaller size. For Rods cut to exact lengths add as follows:
vance over Round Rods of corresponding size. Rectangular, Half-round, Half-oval and Fancy Shapes not less than 4 cts. advance over Round Rods. Fancy Pattern Rods, 10 cts. per lb. advance over Price of Round Rod of corresponding size. To determine price of Rectangular and Half Round Rods, add extras according to List Price of Round Rod of a diameter equal to smaller size. For Rods cut to exact lengths add as follows: 24 in. and over
vance over Round Rods of corresponding size. Rectangular, Half-round, Half-oval and Fancy Shapes not less than 4 cts. advance over Round Rods. Fancy Pattern Rods, 10 cts. per lb. advance over Price of Round Rod of corresponding size. To determine price of Rectangular and Half Round Rods, add extras according to List Price of Round Rod of a diameter equal to smaller size. For Rods cut to exact lengths add as follows: 24 in. and over 1c. 4 in. to 6 in 5c. 12 in. to 24 in 2c. 2 in. to 4 in
vance over Round Rods of corresponding size. Rectangular, Half-round, Half-oval and Fancy Shapes not less than 4 cts. advance over Round Rods. Fancy Pattern Rods, 10 cts. per lb. advance over Price of Round Rod of corresponding size. To determine price of Rectangular and Half Round Rods, add extras according to List Price of Round Rod of a diameter equal to smaller size. For Rods cut to exact lengths add as follows: 24 in. and over. 1c. 4 in. to 6 in. 5c. 12 in. to 24 in. 2c. 2 in. to 4 in. 8c. 6 in. to 12 in. 3c. 1 in. to 2 in. 12c.
vance over Round Rods of corresponding size. Rectangular, Half-round, Half-oval and Fancy Shapes not less than 4 cts. advance over Round Rods. Fancy Pattern Rods, 10 cts. per lb. advance over Price of Round Rod of corresponding size. To determine price of Rectangular and Half Round Rods, add extras according to List Price of Round Rod of a diameter equal to smaller size. For Rods cut to exact lengths add as follows: 24 in. and over. 1c. 4 in. to 6 in. 5c. 12 in. to 24 in. 2c. 2 in. to 4 in. 8c. 6 in. to 12 in. 3c. 1 in. to 2 in. 12c. 6 in. to 9 in. 4c.
vance over Round Rods of corresponding size. Rectangular, Half-round, Half-oval and Fancy Shapes not less than 4 cts. advance over Round Rods. Fancy Pattern Rods, 10 cts. per lb. advance over Price of Round Rod of corresponding size. To determine price of Rectangular and Half Round Rods, add extras according to List Price of Round Rod of a diameter equal to smaller size. For Rods cut to exact lengths add as follows: 24 in. and over. 1c. 4 in. to 6 in. 5c. 12 in. to 24 in. 2c. 2 in. to 4 in. 8c. 6 in. to 12 in. 3c. 1 in. to 2 in. 12c.

Tobin Paronze.

Phosphor Bronze.

Sheet &

Yellow Metal.

Zinc.

Seamless Tube.

Brass Littings. Brazes

Iron L Tube.

Goods.
Rivets a

Tacks and

Hardward

Resting Material.

Weight) Mensure:



"STAR BRAND"

Round Brass Rod.



STOCK LENGTHS VARY FROM 8 TO 12 FEET.

Diameter Inches.	Weight Per Foot. In lbs.	Diameter Inches,	Weight Per Foot In lbs.
1/8	.045	7/8	2.15
5 9	.073	15	2.48
3 16	.100	1	2.85
7 3 2	.138	116	3.20
1/4	.175	11/8	3.57
9 0	.225	136	3.97
16	.275	1 1/4	4.41
$\frac{1}{3}\frac{1}{2}$.335	13/8	5.35
3/8	.395	11/2	6.37
13	.462	1 5/8	7.48
7 T B	.540	13/4	8.65
15/32	.625	17/8	9.95
1/2	.710	2	11.25
17 32	.805	21/4	14.32
9	.900	21/2	17.68
19	1.00	23/4	21.40
5/8	1.10	3	25.47
$\frac{21}{32}$	1.23		
$\frac{1}{16}$	1.35		
3/4	1.66		
13	1.85	1	1

BRASS RODS are made with special reference to FREE DRILLING and TURNING; and are commercially STRAIGHT and TRUE to size.

DIAMETERS AND LENGTHS OTHER THAN SPECIFIED ABOVE SHIPPED FROM MILL PROMPTLY.



1/2 x 1/8 in.,

"STAR BRAND" BRASS ROD HARD DRAWN.

TRADE MARK.
STAR
BRAND

STOCK LENGTHS VARY FROM 8 TO 12 FEET.

HEXAGON.

No.			
Diameter Inches.	Weight per Foot. In lbs.	Diameter Inches.	Weight per Foot. In lbs.
1/8 1/4 5 1/6 3/8 7/6	.050 .112 .196 .308 .442 .604	7/8 1 1 1/16 1 1/8 1 1/4 1 3/8	2.41 3.19 3.57 3.99 4.94 5.99
1/2 9 8 8 1 1 6 3/4	.795 1.10 1.23 1.51 1.86	$ \begin{array}{c} 1\frac{7}{16} \\ 1\frac{1}{2} \\ 158 \\ 134 \\ 2 \end{array} $	6.55 7.13 8.37 9.68 12.60

ARE.	HALF ROUND.			
Weight per Ft. In lbs.	Diameter Inches.	Weight per Ft. In lbs.		
.055	3/8	.198		
. 225	5/8	.550		
.510	7/8	$\frac{.830}{1.070}$		
,905	1	1.430		
1.150 1.40				
2.05				
3,65				
	Weight per Ft. In lbs. .055 .125 .225 .350 .510 .690 .905 1.150 1.40 2.05 2.75	Weight per Ft. Diameter Inches.		

BRASS RODS are made with special reference to Free Drilling and Turning; are also Commercially Straight and True to size.

HALF OVAL BRASS ROD.

LENGTHS, 8 TO 12 FEET.

% x 3/16 in., 34 x 1/4 in., 7/8 x 1/4 in., 1 x 1/4 in., 11/2 x 3/4 in.

Larger Dimension width across flat, smaller dimension height.

DIAMETERS AND LENGTHS OTHER THAN SPECIFIED ABOVE SHIPPED FROM MILL PROMPTLY.

Tobin .

Phosphor Bronze.

Sheet & Bar Cr

Yellow Metal.

Zinc.

Seamless Tube.

Brass Littings.

> Brazed an Iron Lined Tube.

Electrical Goods.

Rivets and Burs.

Tacks and Vails.

Hardware.

Rootule Material.

Wrights & Measures.



"STAR BRAND"
Stubs' Gauge
Round Brass Rod.



IN STRAIGHT LENGTHS.

All sizes from 3 to 18 Stubs' Gauge in 6 to 10 feet lengths.

"STAR BRAND"

Round Brass Rod.

B. & S. Drill Gauges.

3 FEET LONG EXACT, SAWED ENDS,

All sizes, Nos. 1 to 52.

"STAR BRAND"

Commercial Bronze Rod.

HARD DRAWN.

LENGTHS, 8 TO 12 FEET.

14, 16, 38, 1/2, 58, 34, 78, 1 in. Diameter.

DIAMETERS AND LENGTHS OTHER THAN SPECIFIED ABOVE SHIPPED FROM MILL PROMPTLY.

DEPARTMENT No. 2.

TOBIN BRONZE.

Zinc.

Tobin ? Bronze.

Phosphor Bronze.

Sheet & Bar C

Yellow Metal.

Seamless Tube.

Brass Pittings.

Brazed a Iron Line Tube.

Electrical Goods.

Rivets and Burs.

Tacks and Nails.

Hardware.

IS COLUMN Muterial.

Weirhts & Measures.

INSTRUCTIONS FOR ORDERING AND USING TOBIN BRONZE

In ordering sheets, rods, etc., please mention for what purpose the metal is to be used, temper required, and the strain subjected to when in practical use. This information is necessary for our guidance in the manufacture and treatment of the metal.

In forging, flanging and upsetting great care should be taken to heat it **gradually** and thoroughly throughout the mass, and work it only at a **CHERRY RED HEAT.** It is particularly specified *not* to work or strike the metal at a BLACK HEAT. Always allow forgings to cool gradually.

To forge a bolt-head or flange a plate, sufficient of the metal should be heated to insure soundness and uniformity after finishing.

When required for **PISTON RODS** or **SHAFTING** so specify, as we supply them finished and perfectly straight and cut to required lengths.

Please examine all rods and plates, and see that they are stamped with the registered trade mark, "Tobin Bronze."

Particulars and prices of plates, rods, etc., furnished on application.

Tobin Bronze can be drawn to a very high degree of tensile strength, but to insure the best results in uniformity of tensile strength with the maximum degree of elongation, we recommend the following:

Ultimate Tensile Strength.

Diameter of Rods. All rods not larger than 1 in							_	Pounds per Sq. In.
All rods	s not	Targ	ger u	1211 1 11	1			00,000
Larger	than	1	in., b	ut not	larger	than	$1\frac{1}{2}$	in.,58,000
4.6		11/2		6.6	6.6	6.4	2	"56,000
6.4	5 E	2	6.6	6.6	6.6	4.4	21/2	54,000
4.4	6.6	21/2	6.6	4.4	6.6	4.4	3	"52,000
4.6	6.6	3	"					50,000

This however should not be taken as the maximum of tensile strength, as the average of our tests run much higher, but increase of tensile strength will decrease the elongation.

Elongation.

All rods 1¼ in. diam. and larger, not less than 30 per cent. in 2 inches.

All rods smaller than 1¼ in. diam., not less than 20 per cent. in 2 inches.

Elastic Limit.

The method of determining the Elastic Limit is so uncertain that it is impossible to guarantee any absolute figure. The Elastic Limit should, however, average about one-half the Ultimate Tensile Strength.



TOBIN BRONZE RODS.

ROUND.

For STUDS, BOLTS, FORGINGS, Etc., Ordinary Lengths.

Da	16			Das	se P	TI	:e		cts.	pe	r Lb.	Net.	
5/8	in.	to 3	in. d	ia., bo	oth	inc	lusi	ve	BA	SE			
3/8	in.	dia.	and	up to	5/8 i	n.	dia.		1c.	lb.	over	base.	
1/4	6.6	4.6	4.4	6 .	3/8	6 6	4.6		3c.	+ 6	s. 6	6 t	
1/8	6.6	4.6	1.6	"	1/4	6.6	4.4		10c.	4 6	4.4	6.6	

Square, Hexagon and Octagon Rod, ¾ in. and larger 1c. per 1b. advance over above prices.

Rods smaller than ¾ in., special prices.

For cutting to any specific length, longer than 12 in., add to above 1c. per lb. net.

For cutting 12 in. and shorter, special prices.

All Rods over 3 in. dia. are made Piston finish and take Piston Rod prices.

Pump Piston Rods and Yacht Shafting.

Date Base Price Cts. per Lb. Net.

SIZES.	Longer than 12 in., not longer than 120 in,	Longer than 120 in. not longer than 180 in.	Longer than 180 in. not longer than 216 in.	Longer than 216 in.	
5/8 to 21/2 in. dia. both inc.	Base	2c. over base.	3c. over	9c. over	
Over 2½ in. and not over 5 in.	2c. over base.	4c. "	5e. "	11c. ''	
3% in. dia. and up to 5% in.	3e. ''	~			

Piston Rods less than 3/8 in. in dia. and all Rods 12 in. and shorter, special prices.

Prices on Tobin Bronze Seamless Tubes, Plates and Circles furnished on application.

Round Tobin Bronze Rod. HARD DRAWN.

STOCK LENGTHS VARY FROM 8 TO 12 FEET.

Diameter Inches.	Weight Per Foot. In lbs.	Diameter Inches,	Weight Per Foot In lbs.
3 1 6	.100	1	2.84
5 16	.177	$1\frac{1}{16}$ $1\frac{1}{8}$	3,20 3,60
3/8	.399	1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3.99 4.46
7 16 1/2	.711	13/8	5.36
9 16 5/8	.899 1.11	1 1/2	$\frac{6.42}{7.50}$
$\frac{1}{16}$	1.34	134	$\frac{8.70}{10.00}$
3/4 18/6	1.60 1.88	17/8	11.38
7/8 15/6	$\frac{2.18}{2.50}$	21/4 21/2	14.43 17.80

Hexagon Tobin Bronze Rod. HARD DRAWN.

Diameter Inches.	Weight Per Foot, In lbs.	Diameter Inches.	Weight Per Foot. In lbs.
76 1/2 9 16 5/8 11 16 3/4 7/8 1	.612 .800 1.012 1.177 1.512 1.694 2.306 3.25 3.57	1186 1114 1176 1172 158	4.80 5.000 6.55 7.120 8.450 12.80

SIZES OTHER THAN MENTIONED ABOVE, ALSO SQUARE, OCTAGON AND RECTANGULAR SHAPES MADE TO ORDER PROMPTLY.

This metal when rolled hot is stronger than ordinary mild Steel, and is remarkable for its high elastic limit, tensile strength, toughness, uniform texture and resistance to oxidation.

These features render it particularly desirable for Breweries, Dvewood Extract Works, Tanneries, Chemical Sugar House, Marine and Mining Machinery.

At cherry red heat, Tobin Bronze can be forged and stamped

as readily as steel.

Sheet & - Bar Cr Metal. Goods.

Phosphor Bronze.

Yellow

Zinc.

Seamless Tube.

Brass Pittings. Brazed a

Iron Lin Tube. Electrical

Rivets ar Burs.

Tacks and ails.

Hardware.

Material

We also furnish to order

TOBIN BRONZE PISTON RODS AND SHAFTING.

Turned and straightened perfectly true, smooth and uniform; sizes up to 5 in. dia.

ALSO

Tobin Bronze

IN SHEETS, CIRCLES, SEGMENTS AND RECTANGULAR PLATES.

Suitable for Powder Mill Press Plates, Condenser Tube Sheets, Screens, Yacht Center Boards, Rudders and Hull Plates, Cylinder Linings, Etc.

TOBIN BRONZE CUT AND WIRE NAILS.

FOR USE IN POWDER MILLS, MINES, SHIP BUILDING, ETC.

TOBIN BRONZE SEAMLESS TUBE.

FOR BOILER AND CONDENSER PURPOSES.

PRICES QUOTED ON RECEIPT OF SPECIFICATIONS SHOWING REQUIREMENTS.



DEPARTMENT No. 3.

PHOSPHOR-BRONZE.

Phosphor Bronze. Sheet & Bar Cr Yellow Metal. Zinc. Seamless Tube. Brass Fittings. Brazed Iron Lir Tube. Electrica Goods. Rivets a Burs. Tacks and Nails. Hardware Weight: Measure



"STAR BRAND"



Phosphor-Bronze.

The general properties of this product in the ductile alloys are great resistance to corrosion, great tensile strength and elongation with no tendency to disintegration. Furthermore, the elastic limit being very close to the breaking strain, the metal may be worked very close to the breaking point without injury.

Made spring temper it possesses great resiliency, and has less tendency to set, than springs made from any other compound, and does not crystalize in work.

Made into wire for banding, rope and similar purposes where a great strength is required, it has no peer. Its tensile strength in this form is 140,000 lbs. per square inch.

Made into sheets for purposes requiring high resistance to corrosion with a maximum strength and wearing qualities, it is superior to anything yet offered.

Made into pump and piston rods, it possesses a tensile strength of 100,000 lbs. per square inch.



38

ROLL AND SHEET PHOSPHOR-BRONZE. BRAND " Price List of "STAR

PRICE OF NEXT THINNER GAUGE. GAUGES TAKES METAL BETWEEN Sheet & Bar Cr

Yellow Metal. A 15.

Zinc.

Seamless Tube.

Brass Fittings Brazed a Iron Lin Tube.

Electrical Goods.

Rivets an Burs.

Tacks and ails.

Hardware.

Roothy Muterial

Weights & Measures.



Price List for SLITTING "STAR BRAND" Phosphor-Bronze



To widths 2 inches and under add to list as follows:

Cents per pound.

Over	1	1/2	1/4			
То	2	1	1/2	1/4	3 6	Narrowei
Nos.	IN.	IN.	IN.	IN.	IN.	
8 to 11	2	See R	ectan	gular	Rods,	page 47
12 to 14	2	2	Se	e Flat	Wire.	page 46
15 & 16	2	2	6.6	+ 4	66	Narrowei
17 & 18	$\frac{2}{2}$	2 2 2	4	4.6	4.4	Maiin AA Ci
19 & 20	2	2	4	8	12	4.6
21 to 26	3	3	6	10	15	4.4
27 to 30	4	4 5	8	12	17	
31 & 32	5	5	10	15	20	4.4
33	6	6	12	18	24	4.4
34	7	7	14	21	28	6.6
35	8	8	16	24	32	+ 4
36	9	9	18	27	36	4.4

Cutting to Length.

Length	1	2	4	6	0	12 inches
and under.	2	4	6	9	12	and over
Under 2 in wide,	10	9	8	7	6	5c. per lb.
2 in. to 8 in. wide.	12	8	5	4	3	2c. " "

Shorter than 1 in. special prices.

Squared Sheets.

Squared Sheets over 8 in. wide, 15 cents per pound additional.



Price List for SAWING "STAR BRAND" Phosphor-Bronze.



SAWED METAL.

Over 3 inches wide add to list, 60	c. per 1b.
" 1 inch to 3 inch,8c	. 44
" ½ inch to 1 inch,	
1/2 inch and narrower,	

Cutting to Length.

Add to Above.

24	inches	and	over.			5c. per lb.	
12	inches	and	up to	24	inches	6c. ''	
9	h 6	4.4	4.4	12		7c. ''	
						8c. "	
4	6.6	4.4	6.6	6		9c. ''	
						10c. ''	
1	6.6	4 4	6.6	2		12c. ''	
		-					

Shorter than 1 inch special.

HEAVY GAUGE SHEETS.

Nos. o to 8. B. & S.

Wider than 6" see Price List, Page 43.

1 inch and narrower takes price of rectangular rod.

CIRCLES.

Add 20 cents per lb. to price of sheet required to cut them from.

Sheet & Bar Cr Yellow Metal. 2 32 Zinc. Seamless Tube. Brass ittings. Brazed a Iron Line Tube. Electrical Goods. Burs. Tacks and lails. Hardware.

Price List of



"STAR BRAND"

PHOSPHOR-BRONZE WIRE IN COILS.



Brown & Skarpe's Sauge the Standard.

		13			
Gauge	Decimal	Price	Gauge 3	Decimal	Price
No.	Equivalents	per Lb.	No.	Equivalents	per Lb
To 10	.101890	\$.58	TANK	.015940	ds PYC
		W Z	10.00		\$.78
11 to 16	.050820	G.60	121	.014195	.84
17	.045257	161	28	.012641	.90
16	.040303	.61	29	.011257	1.00
19	.085890	.62	30	.010025	1.10
20	.031001	62	31	.008928	1.25
21	.023462	64	32	.007950	1.50
22	.025347	.66	33	.007080	1.75
23.	.022571	.68	34	.006304	2.00
24	.020109	.70	35	.005614	2.50
25	.01.200	.74	36	.005000	3.25

Square Wire to No. 16, add to list...5 cts. per lb. Square Wire, No. 17 to 30, add to list 10 cts. per lb. Tinned Binding Wire, to No. 20 (round), add to

For Cutting Straightened Wire to lengths not smaller than No. 20, same additions as for Rods.

All wire, No. 31 and finer, furnished on spools.

For Spooling Wire add to list per pound as follows:

Size of Spools.	1 lb.	5 lb.	10 lb.	Larger
No. 25 and larger No. 26 to 30 No. 31 to 36	12 ets. 12 '' 15 ''	8 cts. 8 '' 10 ''	3 ets. 5 ''	2 cts.

PRICE LIST OF "STAR BRAND"



PHOSPHOR-BRONZE RODS.



Ordinary Rods for Bolts, Studs, Screws, etc. Dound in Mill Fenoths.

Mound in little Mengerior	
	Per lb.
1 to 2 in. diam. inclusive, varying 1/8 in	50 cts.
5% to 15 " " 16 ".	55 ''
$\frac{1}{4}$ to $\frac{9}{16}$ $\frac{1}{32}$	60 ''
Hexagon and square 1/8 to 11/4 " 1/8".	, 55. "
Hexagon and square 5% to 1½ " ½ ". " ¼ to 18 " 18 " 18 " " ½ to 18 " 18 " " No. 9 to 11 B. & S. Gau	60 "
" $\frac{1}{8}$ to $\frac{3}{16}$ " $\frac{1}{16}$ ".	₹. 65
" No. 9 to 11 B. & S. Gau	ige 70 "
Rectangular ¼ in. thick and over by 1 in. N	vide :
and under	60
Rectangular 1/8 to 3/16 in. thick by 1 in. wide	and
under	00
Rectangular No. 9 to 11 B. & S. Gauge	by 70 "
1 in. wide and under	70 "

PHOSPHOR-BRONZE FINISHED RODS. Round, Smooth and Straight.

For Piston Rods, etc.

	1 (1	LD.
5% to 2 in. diam. inclusive, varying 1 in	, 55	cts.
No. 8 B. & S. Gauge and under 1/4 in. diam	. 63	6.6
No. 9 to 11 B. & S. Gauge inclusive	65	4.6
Rods drawn to decimal fractions of an	inch	or

metre, not standard, add 5 cents per 1b.

FOR CUTTING PHOSPHOR-BRONZE RODS.

		а	.dd	to	1	i	st	a	S	f	o	11	С	,	V	S	:				
12 in.	and	longer																	2	cts.	per lb.
9	4.6	under	12	in				 											3	4.4	
6	16	6.6	9	4.4															4	6.6	4.4
4	6.4	4.4	6	4 6	ì														5	6.6	4.4
2	6.4	6.6	4	6.6	Ì						ì								8	6 0	4.6
1	6 h		2	6 6							Ì								12	6.6	6.6
_	5	Shorter																			

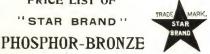
Sheet & Bar Co Yellow Metal. Zinc. Seamless Tube. Brass Fittings. Brazed. Iron Lir Tube. Electrica Goods. **Pivets** a Burs. Tacks and Vails. Hardware Materia Weight

Measur



PRICE LIST OF

"STAR BRAND"



Round, Cast and Turned Rods.

These are made in different grades to meet the requirements of various conditions. They are cast by a special process which imparts the highest degree of density, strength and wearing quality, and are turned straight and true in a lath. Under this method, the production of round and perfect rods is insured.

Phosphor-Bronze Rods.

Finished to size.

Grade &		Diameter	
M Hard and tough R For bearings D Very bard	5% to 15 Per 1b. 50c. 47c. 55c.	1 to 2 Per lb. 45c. 42c. 50c.	Over 2 Per 1b. 43c. 40c. 48c.

Hardened Cast Pump Rods.

Roughed off to about $\frac{1}{16}$ over Finished Size. When ordering, state Finished Size.

		Dian	neter
	Grade	To Finish From 1 to 2 in.	To Finish Over 2 to 6 in.
M D	Hardand Tough Very Hard	Per 1b. 42c. 47c.	Per 1b. 40c. 45c.

No extra charge for Cutting Cast and Turned Rods to lengths over 12 inches.

Rods with Collars, Screw Blanks, etc., at Special Prices. DISCOUNTS QUOTED ON APPLICATION.

TRADE MARK, STAR BRAND

PRICE LIST OF

"STAR BRAND"

Phosphor - Bronze



Telegraph and Telephone Wire

IN COILS

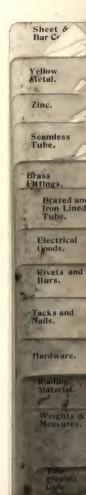
	Brown & S	harpe's Ga	auge	Stubs' Gauge				
No.	Diam, in Decimal Equiva- lents	Approx. Weight per Mile	Price per Pound	Diam, in Decimal Equiva- lents	Approx. Weight per Mile	Price per Pound		
6	.162020	420 lbs.	53c.	.203	658 lbs.	58c.		
8	.128490	264 "	53c.	.165	435 ''	58c.		
9	.114430	200 "	53c.	.148	350 ''	58c.		
10	.101890	166 "	53c.	.134	287 ''	53c.		
11	.090742	132 ''	55c.	.120	230 ''	58c.		
12	.080808	105 "	55c.	.100	190 ''	53c.		
13	.071961	83 "	55c.	.095	144 ''	Бъс.		
14	.064084	66 "	55c.	.083	110 "	55c.		
15	.057068	52 "	55c.	.072	83 "	55c.		
16	,050820	42 "	55c.	.065	66 ''	55c.		
17	.045257	33	56c.	.058	52 ''	55c.		
18	.040303	26 11	56c.	.049	40 "	55c.		
19	,035890	21 "	57c.	.042	29 **	56c.		
20	.031961	17 "	57c.	.035	20 "	57c.		

Smaller sizes than No. 16 B. & S. are not recommended.

Twisted Strands

Composed of 7 Wires twisted together.

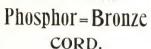
Diam.	Weight per 100 feet Lbs.	Price per 100 feet	Diam.	Weight per 100 feet Lbs.	Price per 100 feet
3-32 1-8 5-32 3 16	2 ¼ 4 6 ¼ 8 ¾	\$2.00 3.30 5.10 7.10	5-16 3-8 7-16 1-2	$25\frac{3}{4}$ $34\frac{1}{2}$ 48 $60\frac{3}{4}$	\$19.35 25.70 34.95 43.85
1-4	151/4	12.25			



PRICE LIST OF



"STAR BRAND"





Composed of 6 Strands and a Hemp Centre, 7 Wires to the Strand.

Diam.	Estimated Breaking Strain	Price per Foot	Diam.	Estimated Breaking Strain	Price per Foot
1-16 in.	300 lbs.	3e.	3-16 in.	1,000 lbs.	7c.
3-32 "	500 ''	4e.	7-32 ''	1,200 ''	8c.
1-8 "	660 ''	5e.	1-4 ''	1,500 ''	10c.

Rigging or Transmission Ropes.

Composed of 6 Strands and a Hemp Centre, 7 Wires to the Strand.



Diam.	Estimated Breaking Strain	Proper Working Load	Price per Foot
1-4 in.	1,500 lbs.	250 lbs.	10c.
5-16 ''	2,500 ''	400 ''	14c.
3-8 ''	4,500 ''	800 "	18c.
7-16 ''	6,000 ''	1,000 ''	24c.
1-2 "	8,000 ''	1,500 "	30c.
5-8 "	12,000 "	2,000 "	48c.
3-4 ''	18,000 ''	4,500 ''	70c.

Larger sizes and ropes with wire centres made to order.



PRICE LIST OF "STAR BRAND" PHOSPHOR= BRONZE



Hoisting Ropes

Composed of 6 Strands and a Hemp Centre, 19 Wires to the Strand.

Diam.	Estimated Breaking Strain	Proper Working Load	Minimum Size of Drum or Sheave	Price per Foot
1-8 in.	500 lbs.	50 lbs.		8c.
3-16 ''	1,000 "	100 ''		10c.
1-4 "	1,800 ''	180 ''		14c.
5-16 ''	3.000 ''	300 "	11/4 in.	16c.
3-8 "	5,000 "	500 ''	11/2 "	22c.
7-16 ''	6,500 ''	650 ''	134 "	26c.
1-2 ''	8,000 ''	1,000 ''	2 "	30c.
5-8 "	12,000 "	2,000 ''	3 "	50c.
3-4 "	18,000 "	3,500 "	31/2 "	72c.

Tiller Ropes.

Composed of 6 individual Ropes and a Hemp Centre; each Rope consisting of 6 Strands of 7 Wires each and a Hemp Core.



Diam.	No. of Wires	Estimated Breaking Strain	Price per Foot
1-8 in.	114	500 lbs.	8c.
3 16 "	114	1.000 ''	10c.
1-4 "	252	1,500 ''	16c.
5-16 "	252	2,000 ''	20c.
3-8 "	252	3,500 ''	24c.
7-16 ''	252	4,500 ''	28c.
1-2 "	252	6,000 ''	32c.
5-8 "	252	8,000 ''	42c.
3-4	252	11,000 ''	60c.

Larger Sizes and Ropes with Wire Centre Made to Order.

Sheet & Bar Co Yellow Metal. Zinc. Seamless Tube. Brass Fittings. Brazed as Iron Line Tube. Electrical Goods. Rivets and Burs. Tacks and Tails. Hardware. Material



"STAR BRAND" Spring Phosphor-Bronze Sheet.



6 IN. WIDE.

FLAT SHEETS ABOUT 6 FEET.

Nos. 14, 15, 16, 17 and 18 B. & S. Gauge.

6 IN WIDE.

IN ROLLS ABOUT 40 LBS.

Nos. 19, 20, 21, 22, 23, 24 B. & S. Gauge.

"STAR BRAND"

Spring Phosphor-Bronze Wire.

IN BUNDLES OF ABOUT 25 LBS. OF A SIZE.

Nos. 14, 15, 16, 17, 18, 19, B. & S. Gauge. Nos. 20, 21, 22, 23, 24, B. & S. Gauge.

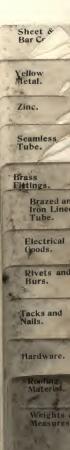
Special sizes and gauges, also Angle Moulding, Channel Strips, Bars, &c., made to order promptly.

We guarantee our Phosphor-Bronze products to be equal in every respect to any made. Quality and finish being our special aim.



DEPARTMENT No. 4.

COPPER SHEETS, PITS, FLATS, RODS.



RULES TO BE OBSERVED



In Ordering

"STAR BRAND"



COPPER IN SHEETS, RODS, Etc.

SHEET COPPER AND COPPER RODS.

When ordering Sheet Copper, always state whether you require Soft or Cold Rolled, or Polished.

State if you require sheets Tinned on one side or plain on both sides.

If **polished**, state if wanted polished on one or both sides.

Give length and width desired.

Give thickness by weight to square foot, or in parts of an inch, or by gauge; if by gauge, state whether by Stubs' or Brown & Sharpes' Gauge.

If parties ordering have no gauge, a small sample may be sent, which will answer as well.

When ordering Bolt or Drawn Copper Rod specify whether **hard** or **soft** is needed, also whether exact lengths are required. Our stock is Hard Drawn and and in random lengths of about 10 to 12 feet.



"STAR BRAND"

BRAZIERS'



Sheathing and Bolt Copper.

SOFT, HARD AND COLD ROLLED.

PLAIN OR TINNED.

Cold Rolled Polished Copper.

Cold Rolled
Patent Leveled Cornice Copper.

Copper Circles

AND

Pattern Sheets,

ALL SIZES AND WEIGHTS.

Copper Bottoms, Pits and Flats.

Yellow Metal.

Zinc.

Seamless Tube.

Brass

Brazed at Iron Line

Tube.
Electrical

Rivets and Burs.

Tacks and Nails.

Hardware.

Moorling Material

Weights Measure

> Pelegraphic

SOFT ROLLED

When ordering Sheet Copper, always state whether you require Tinned on one side or plain on both sides. Give length and width inch, or by gauge; if by gauge, state whether by Stubs' or Brown

The Base price to-day is c. per lb-advance is charged, on account of thickness, quality, added to the "Base" price. See page 61 for Base

Siz	es of Sheets.	64 oz. and over, 50 lb sheet, 30x60 and heav'r	lou ID, Sheet.	24 oz. to 32 oz. 18% to 25 lb. sheet 30 x 60.	
WIDTHS.	LENGTHS.	CENT	CENTS PER POUND.		
	Not longer than 72 ins.	BASE	BASE	BASE	
Not wider than 30 ins.	Longer than 72 ins. Not longer than 96 ins.	BASE	BASE	BASE	
+	Longer than 96 ins.	BASE	BASE	BASE	
	Not longer than 72 ins.	BASE	BASE	BASE	
Wider than 30 ins. but	Donget than 12 ms.	BASE	BASE	BASE	
not wider than 36 ins.	Longer than 96 ins. Not longer than 120 ins.	BASE	BASE	BASE	
	Longer than 120 ins.	BASE	BASE	1	
	Not longer than 72 ins.	BASE	BASE	1	
Wider than 36 ins, but	Longer than 72 ins. Not longer than 96 ins.	BASE	BASE	1	
not wider than 48 ins.	Longer than 96 ins. Not longer than 120 ins.	BASE	BASE	2	
	Longer than 120 ins.	BASE	1	3	
	Not longer than 72 ins.	BASE	BASE	1	
Wider than 48 ins. but	Longer than 72 ins. Not longer than 96 ins	BASE	BASE	2	
not wider than 60 ins.	Longer than 96 ins. Not longer than 120 ins.	BASE	1	3	
	Longer than 120 ins.	1	2	4	
Wider than	Not longer than 96 ins.	BASE	1	3	
60 ins. but not wider	Longer than 96 ins. Not longer than 120 ins.	BASE	2	5	
than 72 ins.	Longer than 120 ins.	1	3	8	
Wider than	Not longer than 96 ins.	1	3	6	
not wider	Longer than 96 ins. Not longer than 120 ins.	2	4	7	
than 108in.	Longer than 120 ins.	3	5	9	
Wider than	Not longer than 132 ins.	4	6		
100 1110.	Longer than 132 ins.	5	8		

FOR SIZES CARRIED IN FOR COLD ROLLING, POLISHING AND

SHEET COPPER.

Soft or Cold Rolled or "Mirror Finish." If you require sheets desired Give thickness by weight to square foot, or in parts of an & Sharpe's Gauge.

This price applies to sizes printed "Base." Where an or size of sheet, the advance stated in list is to be

16 oz to 24 | 14 oz and | 12 oz. and | 10 oz. and | 8 oz. and 9 oz. 12% to | 15 oz. 11 to | 13 oz. 9% to | 11 oz. 7% to | oz. 6% to | 18% 1h. | 12% 1h. | 11 lb. sheet, | 9% 1b. | 7% 1b. sheet, 30x60| sheet, 30x60| sheet, 30x60| Lighter

than 8 oz.

CENTS PER POUND. 2 3 Ω 6 BASE 1 3 9 1 G BASE 6 BASE RASE 4 10 6 9 BASE :3 1 2 7 10 2 4 3 . 8 4 8 6 3 6 11 9 4 6 8 8 10

STOCK, SEE PAGE 62 TO 68. TINNING SHEET COPPER SEE NEXT PAGE.

Vellow Metal. Zinc. Seamless Tube. Brass Fittings. Brazed Iron Li Tube. Electrica Goods. Rivets & Burs. Tacks and Nails. Hardwar Materia Weight Measur

PRICE LIST OF COPPER.—Continued.

Cold or flard Rolled Copper, lighter than 14 ounces per squar foot, add to prices on pages 56 and 57......2 cents per pound.

Polished Copper, to been Wide and under, advance over price for Cold Rolled Copper of corresponding dimensions and thickness, 1 cent per pound.

Polished Copper, Wider than 20 Inches, advance over price for Cold Roned Copper of corresponding dimensions and thickness.........2 cents per pound.

Cold Rolled Copper, Prepared Suitable for Polishing, same as Polished Copper of corresponding dimensions and thickness.

Cold Rolle and Annealed Copper Sheets or Circles, sand price as Cold or Hard Rolled Copper of corresponding dimensions and thickness.

TINNING.

Soft, Cold Rolled and Polished Copper.

MAY 24, 1906

Tinning Sheets of any size, on one side $3\frac{1}{2}$ cents per square foot

" " both sides 7 " " " "

For tinning Circles and Segments . . $3\frac{1}{2}$ " " " "

figured upon the square of a circle, i.e., a 12-inch circle is considered one square foot.

For tinning the edges of sheets, one or both sides, price shall be the same as for tinning all of one side of the specified sheet.

Round Bolt Copper.

We carry I'ound Rods in Stock in lengths of about 10 feet; all sizes from 1/2 in, to 2 in, diameter hard drawn.

PRICE LIST OF



"STAR BRAND"

NICKEL PLATED STAR SHAND

(We charge the Copper by veight and add for Plating by the sheet or square foot extra.)

Sheets 4 x 48 Inches.

Boiler Sizes. Over 12 Oz.

By the case of 500 lbs. 7 in. (14 x 52) 7c.
By the case of 500 lbs. 8 in. (14 x 56) 7c.
By the case of 500 lbs. 9 in. (14 x 60) 7c.

For less quantity than one case, add 2c. per lb.

12 oz. and lighter, add 3c. per lb.

Other Sizes not over 30 inches Wide.

For less quantity than one case, add 2c. per 1b.

Our list price is for Nickel Plating on one side.

Nickel Plating on both sides, double the above rate:

Nickel Plating on both sides, double the above rates for plating.

For Copper Nickel Plated on one side, and Planished on the other side, add one cent per pound to above prices.

Tinning.

For Copper Nickel Plated on one side, and tinned on the other, add for Tinning, 31/2c. per square foot. Yellow Metal.

Seamless Tube.

Brass Fittings.

Iron Lin Tube.

Goods.
Rivets an

Tacks and

Hardware.

Roollny Materi I.

Weights Measure

Tell



PRICE LIST OF "STAR BRAND" Copper Bottoms.





Copper Bottoms, Pits and Flats.

Advance over base price of Soft Copper

		4c. per 1b.
12 " and up to	14 oz. to square fo	ot5c. "
10 "	12 "	'7c. ''
Lighter than 10	OZ	
		ameter, 2c. per lb.
		ameter, p

more than above prices.

Circles over 13 inches in diameter are not classed as Copper Bottoms, but take regular price; see

pages 56 and 57.

Polished copper Bottoms and Flats, 1c. per 1b. in

addition to regular price.

Outside measurements of Standard Sizes of Round and Oval Copper Bottoms. OVAL PITS.

OVAL FLATS.

		OVAL	LAI	3.			
6	7			8		9	inch.
$9\frac{3}{8} \times 18\frac{3}{16}$	10½ x	201/2	12 2	c 22	13:	x 24	4 +
		$5\frac{1}{2}$ 6		8	9	10	inch.
T. K. PITS	$7\frac{3}{32}$	1/2 85/8	934	10^{13}_{16}	11 f	121/4	4.4
		6	7	8	9		inch.
" FLA	ΓS	81/2	91/2	101/2	111/2		4.4

MEMORANDA.

Base Price for



"STAR BRAND" SOFT SHEET COPPER.



PASE ADOPTED

BASE ADOPTED.						
DATE.	Price in Cts. per Pound.	DATE.	Price in Cts. per Pound,			
August 22, 1905.	20					
August 30, 1905.	21					
December 4, 1905.	23					
September 19, 1906.	24					
October 4, 1906.	25					
October 11, 1906.	27					
December 20, 1906.	29					
January 12, 1907.	30					
February 7, 1907.	32					
•						

Yellow Metal.
Zinc.
Seaml Tube.
Brass Fitting
Bra Iroi Tu
Elec Good
Rive Burs
Tacks Nails.
Hard
Runi
W ei Mea
THE RESERVE OF THE PERSON NAMED IN

trical s.

and



BRAND

r. TRADE

STAR

BRAND

10 oz.

30 x 60 in. Sheets.

12 OZ.

14 x 48 in. Sheets. 30 x 60 in. Sheets. 24 x 48 in. "

14 OZ.

			_		
			Sheets.	30 x 60 in. S	Sheets.
		96 in.		$30 \times 96 \text{ in.}$	4.6
		48 in.		$36 \times 72 \text{ in.}$	6.6
		96 in.		36×96 in.	4.6
28	X	96 in.	6.6	48×72 in.	4.6

16 oz.

14 x 48 in.	Sheets.	30 x 60 in.	Sheets
20 x 96 in.	6.4	30 x 96 in.	"
24×48 in.	4.4	36 x 72 in.	4.4
24 x 96 in.	6.6	$36 \times 96 \text{ in.}$	4.4
28 x 96 in.	4.4	48×72 in.	4.6

18 oz.

24 x 48 in. " 36 x	c 96 ii c 96 ii c 72 ii	
--------------------	-------------------------------	--

20 oz.

30 x 60 in. Sheets.	36 x 96 in. Sheets.
	oo A oo III. Directs.
30 x 96 in. "	48 x 72 in. "

24 OZ.

30 x 96 in. Sheets. | 36 x 96 in. Sheets.

ANY OF ABOVE OR SPECIAL SIZES MADE TO ORDER WITH EDGES TINNED

Also in Stock, "Star Brand" Soft Copper Tinned 11/2 in. around all edges both sides 14 x 20 x 16 oz.

Orders for sizes and thicknesses other than above, shipped from Mill promptly.

GILMAN'S SPIRAL SNOW GUARDS, both Copper and Galvanized Iron, always in Stock, ready for immediate shipment.



"STAR BRAND" Soft Plain Copper.



FOR COPPERSMITHS' USE.

SHEETS, 30 X 60 INCHES.			SHEETS	6. 48 X 72	INCHES.
Weight per Square foot in lbs	Thick- ness by Stubs' Ga.	Approxi- mate Weight per Sheet.	Weight per Square foot in lbs,	Thick- ness by Stubs' Ga.	Approxi- mate Weight per Sheet,
1½ 158 134 22½ 2½ 33¼ 43¼ 43¼ 6	21 20 19½ 19 18 17 16 15½ 14½ 14 12½ 12 10½	18 lbs. 20 " 22 " 25 " 30 " 35 " 40 " 44 " 50 " 65 "	1½ 1¾ 2 ½ 3 ½ 4 ½ 5 5½ 6 7 7½ 8 9 12	21 19½ 19 18 17 14¼ 14 13 12 11 10½ 9 8 7½ 6½ 3	36 lb's. 42 '' 48 '' 60 '' 72 '' 84 '' 96 '' 108 '' 120 '' 132 '' 144 '' 168 '' 192 '' 216 '' 2288 ''

SHEETS.	SHEETS. 48 X 120 INCHES.			, 60 X 12	O INCHES.
Weight	Thick-	Approxi-	Weight per Square foot in lbs.	Thick-	Approxi-
per	ness	mate		ness	mate
Square	by	Weight		by	Weight
foot	Stubs'	per		Stubs'	per
in lbs.	Ga.	Sheet.		Ga.	Sheet.
2	19	80 lbs.	4	14	200 lbs.
2½	18	100 ''	5	12	250 "
3	16	120 ''	6	10½	300 "

Soft Copper Circles.

44 inches Diameter, 81/2 lbs. to sq. ft.

Orders for sizes and thicknesses other than above, shipped from Mill promptly.

Yellow Metal. -Zinc. Seamless Tube. Brass Fittings. Tacks and Hardware

Brazed. Iron Lir Tube. Electrica Goods. Rivets a Burs.

Weights



"STAR BRAND" SOFT COPPER

Tinned One Side.



10 OZ.

30 x 60 in. Sheets.

I2 0Z.

14 x 48 in. Sheets. 24 x 48 in. " 36 x 72 in. Sheets. 48 x 72 in. " 48 x 72 in. "

14 OZ.

14 x 48 in. Sheets. 24 x 48 in. " 30 x 60 in. " 36 x 72 in. Sheets. 48 x 72 in. "

16 oz.

14 x 48 in. Shoets. 24 x 48 in. " 36 x 72 in. Sheets. 30 x 60 in. " 48 x 72 in. "

18 oz.

24 x 48 in. Sheets. | 30 x 60 in. Sheets.

20 OZ.

30 x 60 in. Sheets.

Orders for sizes and thicknesses other than above, shipped from Mill promptly.



"STAR BRAND"

Cold Rolled Patent Leveled Cornice Copper.



14 OZ.

14 x 48 in.	Sheets.	28 x 96 in.	Sheets.
20×96 in.	4.6	$30 \times 60 \text{ in.}$	4.6
24 x 48 in.	4.4	30×96 in.	4.4
24 x 96 in.	4.4	36×96 in.	6 6
96 v 96 in	4.4		

16 OZ.

14 x 48 in.	Sheets.	30 x 60 in.	Sheets.
20×96 in.	6.6	30 x 96 in.	4.4
24 x 48 in.	4.4	32×96 in.	4.4
24 x 96 in.	4.4	34×96 in.	4.6
26 x 96 in.	4.6	36×96 in.	
28 x 96 in.	£		

18 OZ.

24	x	96	in.	Sheets.	30	Х	96	in.	Sheets.
			in.	6.4	36	x	96	in.	

20 OZ.

24	x	96 in	. Sheets.	30	X	96	in.	Sheets
		60 in		36	х	96	in.	4.4

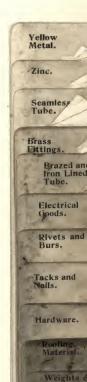
24 OZ.

 30×96 in. Sheets. | 36×96 in. Sheets.

ANY OF ABOVE OR SPECIAL SIZES MADE TO ORDER, WITH EDGES
TINNED 11/2 OR 2 INCHES BOTH SIDES.

Orders for sizes and thicknesses other than above, shipped from Mill promptly.

GILMAN'S SPIRAL SNOW GUARDS, both Copper and Galvanized Iron, always in Stock ready for immediate shipment.



Measures.

"STAR BRAND"



Cold Rolled Polished Copper. TINNED ONE SIDE.



12 OZ.

14 x 60 in. Sheets. 30 x 60 in. "

14 OZ.

14 x 48 in. Sheets. 14 x 56 in. " 24 x 48 in. Sheets. 14 x 60 in. " 30 x 60 in. " 30 x 96 in. "

16 OZ.

14 x 48 in. Sheets. 14 x 60 in. " 24 x 48 in. Sheets. 30 x 60 in. " 30 x 96 in. "

18 OZ.

24 x 48 in. " | 30 x 60 in.

24 x 48 in. Sheets. | 30 x 60 in.

"STAR BRAND" Cold Rolled and Polished Copper.

NOT TINNED POLISHED ONE SIDE.

12 OZ.

30 x 60 in. Sheets.

14 OZ.

24 x 48 in. Sheets. 30 x 60 in. Sheets. 30 x 96 in. "

16 OZ.

24 x 48 in. Sheets. 30 x 60 in. Sheets. 30 x 96 in.

18 OZ.

24 x 48 in. Sheets. | 30 x 60 in. Sheets.

Orders for sizes and thicknesses other than above, shipped from Mill promptly.





NOT POLISHED BUT BRIGHT FINISH ON BOTH SIDES.

14 OZ.

14 x 48 in.	Sheets.	24×60 in. Sheets.
14 x 60 in.		30 x 60 in. "
24×48 in.	4 4	30 x 96 in. "

16 OZ.

14×48	in. Sheet	s. 24	x 60	in.	Sheets
14×60	in. "	30	\times 60	in.	6.6
24 x 48	in. "	30	x 96	in.	4.6

18 OZ.

24 x 48 in. Sheets.	30×60 in. Sheets.
20 oz.	24 oz.
30 v 60 in Sheets.	30×60 in. Sheets.

"STAR BRAND"

Soft Copper Battery Plates or Anodes.

FOR ELECTROPLATING.

18 x 25 in. x 3/8 in. thick, with 1/2 in. hole in each corner.

ANY OTHER SIZE MADE TO ORDER PROMPTLY.

Sizes and thicknesses other than mentioned above, shipped from Mill promptly.

Yellow Metal.

Zinc.

Seamles, Tube.

Brass Fittings.

> Iron Lined Tube.

Brazed an-

Goods.
Rivets and

Tacks and

Burs.

Hardware.

Roolung Materi d.

> Weights & Measures.

erunini



"STAR BRAND"
Cold Rolled Oval

Copper Boiler Bottoms



FLAT, TINNED ONE SIDE.

FLAT OVAL BOILER BOTTOMS

LIGHT 10 OUNCE.

No. 9.

12½ x 22½ in.

No. 7.
10½ x 19½ in.

No. 8. 11½ x 21¼ in. No. 10. 13¼ x 24¼ in.

Packed in cases as follows:

No. 7, 8 and 9 - - - 2 gross in a case No. 10 - - - - 1 gross in a case

CANNOT BREAK CASES

ORDERS FOR SIZES AND THICKNESSES OTHER THAN ABOVE, ALSO COPPER PITS, BOTH OVAL AND ROUND, SHIPPED FROM MILL PROMPTLY.

"STAR BRAND"



HARD DRAWN Rectangular COPPER BARS.



IN LENGTHS FROM 10 TO 12 FEET.

$\frac{1}{16}$	in.	thick	$x \frac{3}{8}, \frac{1}{2}, \frac{5}{8}, \frac{3}{4}, \frac{7}{8} \text{ and } 1$	n.wide.
$\frac{3}{32}$	6.6	+ 4	x 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1 1/4, 1 1/2 and 2	6.4
1/8	6.6	6.6	x 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1 1/4, 1 1/2, 1 3/4, 2, 2]	6.6
16	4.4	4.6	$x \frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, $\frac{1}{1}$, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{2}{2}$, $\frac{3}{2}$	4.6
1/4	6.6	4.4	x ½, 5/8, 3/4, 7/8, 1, 1 ¼, 1½, 1¾, 2, 2½, 3	,4 "
16	4.4	4.4	x 7/8, 1, 2,	4.6
3/8	4.6	4.4	x 1, 1½, 1½, 2, 2½	4.6
$\frac{1}{2}$	4.4	1.6	$\times 1\frac{1}{2}, 1\frac{3}{4}, 2$	4.6

"STAR BRAND"

Hard Drawn Round Copper Rod.

STOCK LENGTHS FROM 10 TO 12 FEET.

Diameter Inches.	Weight Per Foot. In lbs.	Diameter Inches.	Weight Per Foot. In lbs.
1/8	.047	3/4	1.703
3 16	.106	7/8	2.318
14	.189	1	3.03
1 6	.296	11/8	3.831
3/8	.426	11/4	4.723
$\frac{7}{16}$.579	1 1/2	6.811
1/2	.757	2	12.108
76	.958	21/4	15.325
5/8	1.182	,	

Sizes and lengths other than specified above, also Square, Hexagon and Octagon shapes, shipped from Mill promptly.

Yellow Metal.

Zinc.

Seamless Tube.

Brass Fittings.

> Brazed and Iron Lined Tube.

Electrical Goods.

Rivets and Burs.

Tacks and

Vails.

Hardware.

Roofing Material.

> Weights & Measures.

Tritegraphic

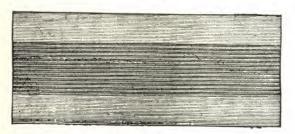


"STAR BRAND" CORRUGATED COLD ROLLED

POLISHED COPPER



Tinned on One Side.



CORRUGATED IN CENTRE WITH BLANK SPACE ON TWO SIDES

For Wash Trays, Sinks, and Bar Linings.

Size of Sheets Before Corrugating.

Sheet 24 x 48 in. x 16 ounce. 30 x 60 " x 16

Size of Sheets After Corrugating.

24 in. wide sheets, width of corrugation, 141/2 in.

Plain surface, 2 in. one side, 5 in. other side, Total width of 24 in. sheet after corrugating, 21 1/2 in.

30 in. wide sheets, width of corrugation, 201/2 in.

Plain surface, 2 in. one side, 5 in. other side. Total width of 30 in. sheet after corrugating 271/2 in.

Special sizes made to order.

PRICES QUOTED ON APPLICATION.



"star brand" Corrugated Copper Sheets.

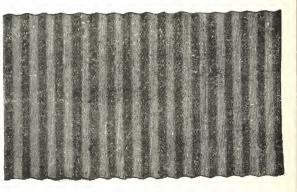


For Sidings and Cornice Work.

Corrugated Copper furnished in sheets up to 96 in. long, regular widths, using corrugations, 1¼, 2½ and 3 inches from centre to centre, running lengthwise of sheet.

"STAR BRAND" Crimped Copper Sheets

any width up to 36 in. and up to 120 in. long, 14, 16, 18 and 20 oz.—size of crimp $\frac{8}{16}$ inch and larger. Crimp running width of sheet only.



3-16 INCH CRIMPED SHEET.

PRICES QUOTED ON APPLICATION

Yellow Metal. Zinc. Seamless Tube. Brass Fittings. Brazed and Iron Lined Tube. Electrical Goods. Rivets and Burs. Tacks and Hardware. Material Weights & Measures.

"STAR BRAND"



Copper Anodes

or



Battery Plates.

FOR ELECTROTYPERS' USE

A SPECIALTY.

Our ANODES are made from absolutely pure LAKE SUPERIOR COPPER, selected especially for this work, and are guaranteed to give best results.

(We have lately been awarded a contract by the U. S. Government, Eureau of Printing, Washington, D. C., for several months' supply of our anodes, which fact shows how highly their experts endorse the quality of our product.)

Carried in stock for prompt shipment.

Plates 18 in. x 25 in. x 3-8 in. thick, with 1-2 in. holes in each corner.

Any other size or thickness made to order at short notice.

We also carry in stock all sizes of

"STAR BRAND"

COPPER WIRE, COPPER ROD AND BRASS TUBING,

used in connection with Solution Tanks.

Prices Furnished on Receipt of Specifications.



DEPARTMENT No. 5.

YELLOW METAL.

Yellow Metal. Zinc. Seamless Tube. Brass Fittings. Brazed and Iron Lined Tube. Electrical Goods. Rivets and Burs. Tacks and Mails. Hardware. Roofing, Material. Weights & Measures.



"STAR BRAND" Yellow Metal Sheathing,



Yellow Metal Bolts,

Yellow Metal Nails, Yellow Metal Dimension Sheets, Circles, Segments, Bars, &c.

RULES TO BE OBSERVED In Ordering YELLOW METAL,

YELLOW METAL IN SHEETS OR RODS.

When ordering Yellow Metal Sheets, state size of sheet and weight per square foot in ounces or thickness by Stubs' Gauge.

If parties ordering have no gauge, a small sample will answer for the thickness.

When ordering Drawn Yellow Metal Rod, specify whether **hard** or **soft** is needed, also whether exact lengths are required. Our stock is Hard Drawn and in random lengths of 8 to 12 feet.



Price List of

STAR BRAND"



SHEATNING

Date Base Tr Cts. per lb. Net. 16 oz. per square foot and

12 "

10 "

For Tinning Sheets, on one side only, 31/2c. sq. foot. both sides,

NAILS.

Sheathing and Stem.

To be used in connection with Base.

Sheathing Metal When taken separately......... 2c. lb. over base.

RODS.

Round in Mill lengths, 8 to 12 feet.

Date..... Base Price,.... Cts. per lb. Net.

5% in, to 3 in, dia, both inclusive Base. 36 in, and up to 56 in, dia..... 1c, lb, over base. 3/8 11 16 3c. " "

Less than ¼ in. dia., special price.

Square and Hexagon Rods, 1c. per lb. over corresponding size of Round Rods.

For Cutting to any Specified length, not shorter than 12 in. add to above prices, 1c. per lb.

Lengths Shorter than 12 in., Special prices.

All Rods over 3 in. in diameter, Special prices.

Special prices quoted on Dimension and Pattern Sheets, Circles and Segments.

Zinc.

Seamless Tube.

Brass Fittings.

> Brazed and Iron Lined Tube.

Electrical Goods.

Rivets and Burs.

Facks and lails.

Hardware.

Materia

Weights &



STAR BRAND" HIGH GRADE YELLOW METAL



Sheathing.

Stock Sizes and Approximate Weights of Sheets, 14 x 48 Inches.

Weight per Sq. Ft. in oz.	12	14	16	18	20	22
Lbs. and ozs. per sheet Sheets per case	1b. oz. 3 – 7 175	1b. oz. 4 – 2 150	lb. oz. 4 - 10 125	lb. o 5	1 5-13 100	6 - 7 100
Weight per Sq. Ft. in o	602	604	583	604		642
Lbs. and ozs. per sheet.		1b. o	z. lb.	oz.	28 lb. oz. 8-3	30 lb. oz. 8 - 12
Sheets per case		85 595	Į	80	75 613	70 613

"STAR BRAND" Yellow Metal Stem Plates.

19, 14 and 16 in, wide x 16 in, thick, in lengths of about 8 feet.

"STAR BRAND" Yellow Metal Keel Plates.

22 x 48 and 24 x 48 in, x 24 oz, and heavier.

We also carry a full stock of Sheet Copper, for Sheathing and other purposes.



"STAR BRAND"
HIGH GRADE
YELLOW



MUNTZ METAL RODS.

Our "Star Brand" Yellow or Muntz Metal Rods are suitable for Hot Forging and possess tensile strength of about 63,000 pounds to square inch.

ROUND. Hard Drawn.

Stock Lengths Vary from 8 to 12 Feet.

Diameter Inches.	Weight per Foot, in Lbs.	Diameter Inches.	Weight per Foot in Lbs
3 16	.100	1 1/8	3.57
1/4	.180	11/4	4.41
5 16	.275	$1\frac{5}{16}$	4.88
3/8	.390	1 3/8	5.35
7	.540	1 1/2	6.37
1/2	.710	1 5/8	7.48
9 16	.900	1 3/4	8.65
5/8	1.10	1 7/8	9.95
$\frac{1}{16}$	1.35	2	11.25
3/4	1.66	21/4	14.32
13	1.85	21/2	17.68
7/8	2.15	23/4	21.40
1	2.85	23/ ₄ 3	25.47

Diameters and lengths other than specified above, also SQUARE, HEXAGON and RECTANGULAR shapes, shipped from Mill promptly.

This metal when rolled hot is stronger than mild steel, and is remarkable for its high elastic limit, tensile strength, toughness, uniform texture and resistance to oxidation.

Our "Star Brand" High Grade Yellow Metal can be forged, stamped and dropped forged the same as mild steel and has the endorsement of marine and naval experts.

It is particularly desirable for use in connection with Breweries, Dycwood Extract Works, Tanneries, Sugar Houses, Chemical, Marine and Milling Machinery, etc., etc.

Actual tests of our High Grade Yellow Metal Bars made by Watertown Arsenal, Watertown, Mass., resulted as follows:

Tensile Strength 1 in. Turned Bar, 63,000 lbs. Elongation, 20 per cent.

Lowest Elastic Limit 44,000 lbs. Highest Elastic Limit, 51,000 lbs.

- Zinc.

Seamless Tube.

Brass Fittings.

> Brazed and Iron Lined Tube.

Electrical Goods.

Rivets and Burs.

Tacks and

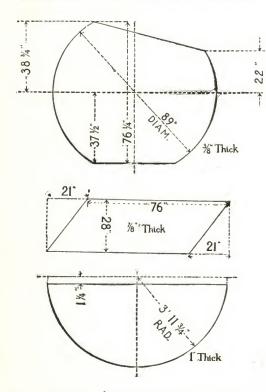
Hardware.

Renting Material

> Weights & Measures.

vininti

WE make a specialty of High Grade Muntz or Yellow Metal Rectangular Sheets, Circles, and Segments for Condenser Heads, Baffle and Supporting Plates, and all other pur-poses where an extra quality non-corrosive Metal is requisite.



The above outline illustrations represent a few of the shapes we are fitted up to make.

Our facilities enable us to furnish highly finished plates of even the largest sizes in Circles, or Irregular Shapes, for Condensers, thus obviating the necessity of casting and finishing.

Particular attention is given to have all plates absolutely true and accurate to dimensions specified.

We also furnish the above in Brass and Tobin Bronze.



"STAR BRAND" Yellow Metal Nails.



PACKED IN KEGS CONTAINING 100 LBS.
ALSO IN PAPER BOXES CONTAINING 5 LBS.

SHEATHING.

1 1/4 in. or 3d.

I in. or 2d.

7/8 in.

SIZES IN STOCK.

34, 78, 1, 11/2, 11/4, 13/8, 11/2, 13/4, 2, 21/2, and 3 in.

STEM.

13/4 in. or 5d.

The state of the s

1½ in. or 4d.

1 ¼ in. 3d.

SIZES IN STOCK.-14, 11/2, 13/4, 2, 21/2, 3 in.

SLATING.

LARGE FLAT HEADS.

13/4 in. or 5d.

1½ in. or 4d.

11/4 in. or 3d.

SIZES IN STOCK.-I, 11/4, 11/2, 13/4, 2 in.

We also carry a stock of Copper Cut and Wire Nails. See pages 158 to 164.

Also Yellow Metal or Composition Spikes from 3 to 6 inches long.

× Zinc.

Seamles: Tube.

Brass Fittings.

> Braze Iron I Tube.

Goods.
Rivets

Tacks an

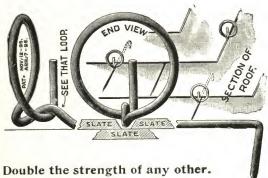
Hardwa

Rooling Materia

Weigh Measu

greph

GILMAN'S SPIRAL SNOW GUARD.



Don't forget to specify and use them.

The Guards bear on both sides over double slates.

Made from galvanized steel and pure copper wire.

We carry a large stock, both COPPER and GALVANIZED STEEL, on hand for prompt delivery.

Packed in cases of 500 each and in barrels containing 2000.

PRICES QUOTED ON APPLICATION.



DEPARTMENT No. 6.

SHEET ZINC,
NICKEL PLATED ZINC
and
ZINC BATTERY PLATES.



BRAND

PRICE LIST

"STAR BRAND" Sheet Zinc.



Packed in casks containing about 600 lbs.

Date Base Price per 100 lbs. EXTRAS OVER BASE PRICE In cents per 100 pounds.

SIZE	No. 5	No. 6	No. 7	No. 8	No. 9 to 2
32 to 40 x 84	.50	.25	.15	.10	Base
24×84	.80	.25	.15	.10	4.4
$26 \ge 84$.95	.25	.15	.10	
28 x 84	.90	.75	.50	. 35	
30×84	.80	. 65	.45	.30	6.6
48 x 84	.80	.25	.15	.10	6.6
50 x 84	.85	.25	.15	.10	4.6
52×84	.95	.25	.15	.10	
60 x 84	1.75	.80	.45	.15	.20
36×96	.70	.30	.20	.10	Base
48 x 96	1.05	.65	.20	.10	e 6
36 x 108	.65	.45	.30	.20	4.6
48 x 108	1.30	.75	.20	.15	4.6
62 x 84	Extra	s give	n on a	pplica	tion.

FOR SIZES CARRIED IN STOCK SEE NEXT PAGE

STOCK SIZES IN RED IN

4 5 6 7 8 9 10 11 12 13 14 15 16 16 16 2.30 .30 .37 .45 .52 .60 .67 .75 .90 1.05 1.20 1.35 1.50 1.60 1.65 1.00 .010 .012 .014 .016 .018 .020 .024 .025 .032 .035 1.040 .045 .046 .045 .046 .045 .046 .045 .046 .045 .046 .045 .046 .045 .046 .045 .046 .045 .046 .045 .046 .045 .046 .045 .046 .045 .046 .045 .046 .045 .046 .045 .046 .046 .046 .046 .046 .046 .046 .046
0.000 0.000 <t< td=""></t<>
4 8 90 1 4 4 4 70 10 50 50

Table showing weights, gauge and sizes of

HEET

ABOVE PACKED IN CASKS CONTAINING ABOUT 600 LBS. EACH. BIZES AND THICKNESS PRINTED IN RED INDICATE OUR STOCK ON HAND IN NEW YORK READY FOR IMMEDIATE SHIPMENT.
THER SIZES SHIPPED FROM MILL PROMPTLY, ;; ... ABOVE PACKED IN CASKS CONTAINING ABOUT 600 LBS. EACH OTHER SIZES SHIPPED FROM MILL PROMPTLY.

Seamless Tube. Brass Fittings. Brazed and Iron Lined Tube. Electrical Goods. Burs. Tacks and Nails. Hardware.



Table showing Weights and Gauges of "STAR BRAND"



																	Ì	
Zinc Gauge Numbers	6 7 8 9	4	20	9	2	00	5	10 11 12 13 14 15 16 17 18 19 20	11	12	13	14	15	16	17	18	19	07
Decimal Equivalent	900.	0.006 .0008 .010 .013 .014 .016 .018 .020 .034 .028 .032 .040 .045 .040 .045 .055 .060 .070	010	013	014	016	018	080	024	88	032	036	040	0.045	020	055	090	070
Nearest B. & S. Gauge	34	32	8	38	53	58	25	24	68 68	22	20	13	138	17	16	15	14	13
Weight in lbs. per sq. ft.	.22	.30	33	.45	.52	.60	.67	.75	.90	.05	02.1	. 33	.50	.68	58	5.06	2.25	65

ALL SIZES PRINTED IN RED

Carried in Stock Ready for Immediate Shipment.

Packed in cases of about 250 pounds net weight. Do not break cases. In Sheets 201/2 in. x 36 in.

SHEETS OF OTHER SIZES MADE TO ORDER AT SHORT NOTICE.

Our "Star Brand" Nickel-Plated Zinc is made from best selected material, rolled as to the manufacture of many articles requiring a bright metallic surface which must be highly polished on one side. On account of the low cost of this material, it is adapted accurately to gauge as posssible, flat and free from buckles, plated with pure nickel and sold at a price which prohibits the use of more expensive metals. Prices quoted on application.



"STAR BRAND" ROLLED ZINC BATTERY PLATES.



Thickness	Dec.	Weight Per Sq. Ft.	Size	Size	Size
½ in.		18¾ lb.	6 x 12	8 x 12	12 x 36
1 in.	1.000	37½ lb.	6 x 12		

SIZES OTHER THAN ABOVE, SHIPPED FROM MILL PROMPTLY.

CAN ALSO FURNISH

"STAR BRAND"
DRAWN ZINC RODS

For Battery and Other Purposes.

Made From Finest Grades of Spelter.

Round, Square, Rectangular or Segment Shape,
In long random lengths or cut to particular lengths.

"STAR BRAND"
CUT ZINC SLATING NAILS.
CUT ZINC SHEATHING and STEM NAILS.

"STAR BRAND"
ZINC STAIR TREADS and NOSINGS.
BRAZED ZINC TUBING.

SPELTER

(Cast Zinc Plates) about 50 lb. per plate.

PRICES QUOTED ON APPLICATION.

Seamless Tube.

Brass Fittings.

Brazed and Iron Lined Tube.

Electrical Goods.

Rivets and Burs.

Tacks and Nails.

Hardware.

Moolin Material

> Weights & Measures.

MEMORANDA



DEPARTMENT No. 7.

SEAMLESS TUBES.

Seamless Tube. Brass Fittings. Brazed and Iron Lined Tube. Electrical Goods. Rivets and Burs. Tacks and Nails. Hardware. Material Weights & Measures.



"STAR BRAND"

SEAMLESS BRASS



COPPER TUBES.

SPECIAL ATTENTION is called to the following facts regarding above :

Our Tubes are uniform in diameter and thickness throughout; inside and outside surfaces are free from cracks or defects of any kind detrimental to strength.

Each Tube is tested by internal hydrostatic pressure, and carefully inspected before shipment.

Brass Tubes have a maximum tensile strength of 40,000 pounds per square inch.

When made with a mixture containing 60 pounds of Copper and 40 pounds of Zinc, will stand bending on themselves, and flanging both hot and cold without fracture. When made of other proportions of Copper and Zinc they will stand bending on themselves and flanging cold without fracture, and any other test that an alloy of this kind should be put to.

Our Copper Tubes are made from absolutely pure Copper, have a maximum tensile strength of 30,000 pounds per square inch, and are guaranteed to stand every known test of working, such as flanging to 1/3 of their diameter, bending, flattening, turning inside-out, in fact, any kind of coppersmithwork without fracture. They are also uniform in quality, thickness and diameter.

"STAR BRAND" TINNED AND PLAIN CONDENSER TUBES, Brass and Admiralty Mixture.

We have an enviable reputation for the manufacture of high grade Condenser Tubes, and are supplying some of the largest consumers in the country with their requirements for above, also U. S. Government Navy Yards.

RULE

To Determine Safe Working Pressure for Seamless Brass and Copper Tubing, in Pounds per Square Inch.

First—Ascertain the tensile strength of the metal in the tube.

Second.—Multiply the tensile strength by the thickness of the metal in inches, or decimal parts of an inch.

Third.—Divide by the radius (one-half of the diameter) expressed in inches, and the result shows the bursting pressure in pounds per square inch.

Fourth—Divide the bursting pressure by the factor of safety to determine safe working pressure. If a safety factor of six (6) is allowed, divide the bursting pressure by six (6).

Example: A tube 4 inches outside diameter, No. 8, B. & S. Gauge, made of Brass, which has a tensile strength of 40,000 pounds per square inch, shows 428 pounds pressure per square inch as follows:

40,000 lbs. per square inch.

1/2 diam. of 4 in.

Tube = 2 in.

Factor of safety, 6

1/2 diam. of 4 in.

1

For tensile strength of Brass and Copper, see page 871/2.

Electrical Goods.

Rivets and Burs.

Tacks and Nails.

Hardware.

Koolur Material.

Weights & Measures.

Brass

Directions for Ordering



"STAR BRAND" SEAMLESS BRASS AND COPPER TURING.



First.—Be particular to specify "Seamless," otherwise it is open to question whether "Brazed" or "Seamless" is required, unless we are familiar with our customer's requirements.

Second.—State whether Brass or Copper is required.

Third,—Give the inside or outside diameter, and be sure to state whether the diameter be "inside" or "outside."

Fourth.—Give the thickness of the wall by Stubs Gauge if possible; if not, then by Brown & Sharpe's Gauge, or in decimal parts of an inch, or in fractions of an inch.

Fifth.—Give the lengths of the pieces required, if particular lengths be necessary; otherwise we will send 12-feet lengths, if the size ordered is a stock size to be taken from stock; or if it is a special size that must be made to order, regular mill lengths of from 12 to 16 feet will be shipped.

Sixth.—State temper_required. Regular stock temper of Brass and Copper Tubing is hard. Iron Pipe Sizes, Copper, hard. Iron Pipe Sizes, Brass, semi-annealed and fully annealed; the semi-annealed pipe being for ordinary use, and the fully annealed pipe for bending. If no temper is mentioned, stock temper will be sent, whether the material is taken from stock or made to order at the mill. Customers should bear in mind that tubing that is to be bent must be ordered annealed for bending; tubing that is to be flanged or expanded on the ends, must be ordered with the ends annealed.

Seventh.—State purpose for which tubing is required; provided, of course, we are not familiar with the purpose for which the material is intended.

Attention to the above details in ordering will facilitate prompt handling of the order and save correspondence,

MEMORANDA

Brass
Rittings.

Brazed and Iron Lined Tube.

Electrical Goods.

Rivets and Burs.

Tacks and Nails.

Hardware.

Roofing Material.

Weights & Measures.

TRADE MARK. "STAR

"STAR BRAND" SEAMLESS

STUBS' GAUGE

The Base price to day is cents per pound (subject only. The advances stated in list are to be added to the Base Outside Diameter.

			_	and and	1	-					-	1			-			-	-			
Stubs' Guage.	Dec. Equiv.	6	1	16	2000	la	$\frac{1}{2}$	14	58	34	(m)	1	14	11	13	2	21	21	23	3	31	31
4 to 11	.238 to .120		_			Č	10			117	>											
12	.109			/			-		d	5	5	5	E	3 /	1 5	SE		P	R	Ī	C	E
13	.095		1		4				QT	5	5	5										
14	.083			1			7	-72	7	5	5	5	1	1	1	1	1	1	1	1	1	1
1.5	.072		,	9	1	8	3	57	7	5	5	5	1	1	1	1	1	1	1	1	1	1
16	.965			-	8	8	7	7	7	5	5	5	2	2	2	2	2	2	2	2	2	5
7	.058				8	8	7	7	7	5	5	5	3	3	3	3	3	3	3	3	5	6
18	.049	48	29	12	0	9	8	8	8	6	6	6	4	4	4	4	4	4	4	6	7	8
19	.042	49	38	17	9	9	8	8	8	6	6	6	5	5	5	5	5	5	7	8	9	10
20	.035	53	40,	92	9	9	8	8	8	6	6	в	6	6	6	6	6	7	7	8	9	11
21	.032	54	42	27	11	10	10	8	8	7	7	7	7	7	7	7	7					
22	.028	56	47	32	13	13	11	11	9	8	8	8	8	8	8	8	8					
23	.025	58	52	37	15	15	13	13	11	11	11	11	11	11	11	13	15					
24	.022	60	57	42	31	26	24	23	22	21	19	18	18	19	19	20	21					
25	.020	63	62	47	34	29	27	25	24	23	22	22	23	24								ļ

Note.—For diameters of the fractional parts of an inch where would appear if designated.—Thus: 1 15-16 would go at price of inches.

TUBES OF A THICKNESS BETWEEN GAUGES

In ordering be careful to state whether tube Prices for sizes larger or smaller than appear

TO ASCERTAIN

COPPER, BRONZE, OR GILDING TUBES, ADD LOW BRASS TUBES, ADMIRALTY MIXTURE,

FOR TINNING TUBES SEE PAGE 93.

FOR PRICES ON IRON PIPE

BRASS TUBING.

THE STANDARD



to change without notice.) This price applies to sizes printed Base price, Make no price that does not appear on list.

									-	R	1	ric	18	in	ce	nts	s p	er	po	un	d.
33	4	44	412	13	5	51	51	53	6	$6\frac{1}{4}$	1 2	63	4	71	~ 1	72	8	81	0	91	0
1	1	1	3	3	5	5	6	6	17	7	-	Č	1	9	9	9	II	11	11	14	17
2	2	2	4	4	6	-	7	7	9	8	8	8	8	10	10	10	12	12	12	15	18
3	3	3	5	5	ñ.	7	8	1	9	d	(9	9	9	R	11	11	13	13	13	16	19
4	4	4	6	đ	8	8	J	9	10	V	10		10	12	12	12	14	14	14		Г
6	6	ß	A.	7	9	9	11	11	4	14	14	B	16	19	19	19				-	-
6	7	8	u	11	I	16	16	16	19	19	38	23	23	26	26	26				1	-
7	8	9	12	12	12	17	17	17	20	20	24	24	24	27	27	27					
9	10	11	14	14	14	20	20	00	73	23	30	30	30				-				-
11	13	15	17	21	21	25	29	31	31					12.			1				
11	13	19	19	23	23	81	31														
			1																		
				Г																	
	Ť	1		1			1		1				1	1	-		-	1			
			-4	ļ	+	1		+		1	1			-			-		1		1

no price is given, take the column to the left of where such size 1 3-4 inches; 1 1-8 at the price of one inch, 5 1-8 at the price of 5

TAKES PRICE OF THE THINNER GAUGE.

is wanted outside diameter or inside diameter. on list, quoted upon application.

. .

PRICES FOR
TO ABOVE PRICES

44

CENTS PER POUND.

..

FOR POLISHING, THREADING AND NICKEL PLATING SEE PAGE 95.
SIZES SEE NEXT PAGE



PRICE LIST OF



"STAR BRAND" Seamless Brass Tubes.

TRADE MARK

IRON PIPE SIZES.

Base	Pri	ce is	1	.cen	ts pe	r poi	ınd.
Iron Pipe Sizes	. 4.	1/8	O.	1/4	3/8		1/2
Price in cents per pound vance on base		2	3	7	2		1
Iron Pipe Sizes. C.	3/2	1	11/4	1 ½	2	21/2	3
4//2	0		Bas	se P	rice		
Iron Pipa Sizes	31/2	4	41/2	5	6	7	8
Price in cents per pouch advance on base	1	2	4	6	7	9	11

To Ascertain Prices for

Copper, Bronze, or Gilding Tubes,

add to price of Brass Tube of corresponding size...... cents per pound.

Low Brass Tubes,

add to price of Brass Tube of corresponding size.....cents per pound.

Admiralty Mixture,

add to price of Brass Tube of corresponding size......cents per pound.

For Cutting All Seamless Tubes to Short Lengths Such as Pump Chambers, Whistle Bells,

		Cylinders, Etc., Etc.	
Tubing			Extra
Cut			Advance
Over			on List
1 to 2 fe	eet	inclusive	1c.
9 in. an	d up to	12 in	1½c.
6 in.	6.6	9 in	2c.
4 in.	4.4	6 in	2½c.
2 in.	6.6	4 in "	3c.
1 in.	6.6	2 in "	3½c.
3 in.	6.6	1 in "	4c.

FOR COMPLETE TABLE OF WEIGHTS AND MEASUREMENTS (IRON PIPE SIZES) SEE PAGES 98 AND 99. FOR POLISHING THREADING AND NICKEL PLATING SEE PAGE 95.



Price List of "STAR BRAND" CONDENSER TUBES.



Date.....

nts per pound. Base Price on Brass Tubes is Extras over Base Price Bras

			BRASS	/	A	DMI	RAL	ŢΥ.
Stubs Gauge.	Decimal Equivalent	5/8"	34" 7/8"	1,5	5/8"	34"	A STATE	1"
16	.005	4	4 4	2	35	A.	7	7
17	.058	1	4C.4	4	Sky	7	7	7
18	.049	4	P 4	As .	7	7	7	7
19	,042	6	6	6	9	9	9	9
20	035	8	5,6	6	11	9	9	9

FOR TINNING CONDENSER TUBES.

Tinned inside and outside, 1 cent per pound extra. Tinned inside only or outside only, 5 cents per pound extra.

TINNING TUBES.

ALL TUBES, other than Condenser Tubes of sizes and gauges above specified, tinned both sides, 3 cents per pound extra.

ALL TUBES tinned one side only, 5 cents per pound extra.

Tinning Tubes on ends only for a distance of not over 3 inches from ends an extra charge of not less than 1 cent per pound.

SHAPES OTHER THAN ROUND.

All Seamless Tubes of any shape other than round add to price of regular round tubes of corresponding circumference not less than 5 cents per pound.

Brass Pittings. Electrica Goods. Rivets as Burs. Tacks and Hardware.

Brazed a Fron Lin Tube.

Weights

MEMORANDA

BASE PRICES FOR



"STAR BRAND" SEAMLESS BRASS AND COPPER TUBES.



Date.	Brass.	Copper.
Feb. 19th, 1904.	18 Cents per lb.	21 Cents per lb.
Nov. 22d, 1904.	20 Cents per lb.	23 Cents per lb.
Dec. 4th, 1905.	22 Cents per lb.	25 Cents per lb.
Sept. 19th, 1906.	23 Cents per lb.	27 Cents per lb.
Oct. 15th, 1906.	25 Cents per lb.	29 Cents per lb.
Dec. 20th, 1906.	26 Cents per lb.	31 Cents per lb.
Jan. 17th, 1907.	27 Cents per lb.	33 Cents per lb.
	Cents per lb.	Cents per lb.
	Cents per lb.	Cents pes lb.
	Cents per 1b.	Cents per lb.
*	Cents per lb.	Cents per lb.
	Cents per lb.	Cents per lb.
	Cents per 1b.	Cents per lb.
	Cents per lb.	Cents per lb.
	Cents per lb.	Cents per lb.
	Cents per lb.	Cents per lb.

Price List for

POLISHING,

POLISHING AND LACQUERING, POLISHING AND NICKEL PLATING

AND THREADING



"STAR BRAND" SEAMLESS BRASS TUBES AND PIPES.



Iron Pipe Sizes.	Plumbers' Sizes and all other Tubes by outside diameters.	Polish- ing.	Polishing and Lacquer- ing.	Polishing and Nickel Plating.	Threading Iron Pipe Sizes and Plumbers' Sizes.
Inches.	Inches.	Cts, per foot,	Cts. per foot.	Cts. per foot.	Cts. per end.
1/8 1/4 8/8	1/4 3/8 1/2 5/8	11/2 11/2 13/4 11/5	2 2 2 2 2 5 2 2 5	2 2 2 2 2 2 2 2 2 2 2 2 2	3 3 3
½ 3⁄ ₄	3/4 7/8 1 11/8	$2\frac{1}{5}$ $2\frac{1}{4}$ $2\frac{1}{2}$ $2\frac{3}{4}$	2½ 25% 234 27%	21/2 25/8 23/4 27/8	3 3 3
1	1 1/4 13/8 1 1/6 15/8	3 31/4 33/8 31/2	3½ 33/8 3½ 33/4	31/8 33/8 31/2 33/4	31/2
1 1/2	13/4 17/8 2 21/4	33/4 4 41/4 41/6	4 4 ¹ / ₄ 4 ¹ / ₂ 4 ³ / ₄	4 41/4 41/4 43/4	4½ 5 6 7
21/2	2½ 23/4 3 3½	5 5½ 6 6½	51/4 53/4 61/4 63/4	5 ½ 5 ½ 6 ½ 6 ¾ 6 ¾	10
3 31/4 4	31/2 33/4 4 41/2	7 734 8½ 10	7½ 9 11 14	7½ 9 11 14	15 20 20
4½ 5	5 5½ 6 6½	12 15 18 22	18 21 24 27	18 21 24 27	25 20 45

Threading Copper Tubes Special Prices.

Brass
Fittings.

Brazed and leon Lined Tube.

Electrical Goods.

Rivets and Burs.

Tacks and Nails.

Hardware.

Weights & Measures.



"STAR BRAND"

Seamless Drawn



BRASS, COPPER and BRONZE **TUBING**

FOR

Condensers. Feed Water Heaters. Steam Pipes. Beer Coolers. Speaking Tubes, Hand Rail. Worms for Stills.

Paper Rolls. Piston Rod Covers. Printers' Moulds. Pump Chambers. Cemetery Rail, Steam Gauges, Plumbers' Tube.

AND

Coppersmiths' Work Generally.

Brass and Copper Locomotive Flues

AND

Brass Pneumatic Delivery Tubing A Specialty.

OUR COPPER TUBE is made from PURE LAKE SUPERIOR COPPER free from alloy.

Can furnish all sizes of BRASS FITTINGS, Rough, Finished, Tinned, and Nickel Plated. Also COPPER AND SPECIAL COMPOSITION FITTINGS.



"star brand" SEAMLESS BRASS TUBE.

HARD DRAWN. IN 12 FEET LENGTHS.



Orders will be filled by **Stubs'** Gauge, also Hard Temper, unless otherwise specified.

Outside Diameter, Inches.	Stubs' Gauge Exact,	Decimal Equivalents	Weight Per Foot. In lbs.
1/	21	.032	.034
18 3	21	. 32	.057
16	20	,(35	.087
1/4 16	20	.035	.112
3/8	19	.042	.161
78 176	19	.042	.192
1/2	18	.049	.255
72 9	18	.049	.290
58	18	.049	.326
78 34	17	.058	.463
7/8	17	.058	.547
78 1	16	.065	.700
11/8	16	.065	.790
11/4	15	.072	.98
13/8	14	°, t.83	1.24
11/2	14	.083	1.36
15/8	14	.083	1.48
134	13	.095	1.82
2	13	.095	2.09
21/4	12	.109	2.69
21/8	12	.109	3.01
234	12	.109	3.32
3	11	,120	3.99
31/4	10	.134	4.82
31/2	10	.134	5.21
4	10	.134	5,98

"STAR BRAND"

Hard Seamless Brass Tube for Railing Work.

Thickness by Stubs' Gauge in lengths of 22 feet.

Outside Dia.	Stubs Gauge.	Weight Per Foo In Lbs.
11/4	7	,95
116	19	.76
2	17	1.28
2	19	1.02

Annealed Tubes, also sizes and lengths other than specified above, furnished from mill with reasonable promptness.





"Star Brand" Seamless Brass Tube.



IN 12 FEET LENGTHS. FLAIN ENDS.

*Regular Temper.	Annealed.	*Regular Temper, Nickel Plated.	*Regular Temper. Tinned.	Weight Per Foot in Lbs.
1/8	1/8			.25
74 3/8	1/8 1/4 3/8 1/2 3/4	74 3/8	3/8	. 43
1/8 1/4 3/8 1/2 3/4	1/2 3/4	3/8 1/2 3/4	1/2 3/4	$\frac{.90}{1.25}$
1 1/4	1 1 1/4	1	1 1 1/4	$\frac{1.70}{2.50}$
1 1/2	1 1/2	11/4	1 1/2	3.00
21/2 3	2 1/2	2	2	$\frac{4.00}{5.75}$
3				8.30
3½ 4 5				10.90
5				$12.70 \\ 15.75$
6				18.31

OTHER SIZES UP TO 10 INCH MADE TO ORDER PROMPTLY.

* Brass Tube, Iron Pipe Sizes, termed regular temper, is not strictly hard, but just sufficiently annealed to prevent cracking, making it suitable for Plumbing and Steam work.

Lengths other than 12 ft., also Tubes threaded one or both ends, furnished promptly from Mill.

Seamless Bronze Tube, Iron Pipe Sizes, for exposed plumbing, either plain or polished, made to order promptly.

FOR BRASS FITTINGS SEE PAGE 110 TO 113

"STAR BRAND"



Seamless Brass Tube. EXTRA HEAVY. IRON PIPE SIZES.



REGULAR TEMPER.

IN 12 FEET LENGTHS. PLAIN ENDS.

Iron Pipe Size. Inches.	Inside Diameter.	Outside Diameter.	Weight Per Foot In Lbs.
1/4	.294	.540	. 625
3/8	.421	. 675	.830
1/2	.542	.840	1.200
3/4	.736	1.050	1.660
1	.951	1.315	2.360
11/4	1.272	1.660	3.300
1 1/2	1,494	1.900	4.250
2	1.933	2.375	5.460
21/2	2.315	2.875	8.300
3	2.892	3,50	11.200
4	3,818	4,500	16.500

Brass Tube, Iron Pipe sizes, termed regular temper, is not strictly hard, but just sufficiently annealed to prevent cracking, making it suitable for Plumbing and Steam work.

Can furnish from Mill Extra Heavy Iron Pipe Sizes, Brass, Copper or Bronze, all sizes up to 8 in.

LENGTHS OTHER THAN 12 FEET, ALSO TUBES THREADED ONE OR BOTH ENDS, SHIPPED FROM MILL PROMPTLY.





"STAR BRAND" Plumbers' Fine Thread



Seamless Brass Tube.

ADAPTED FOR LIGHT PRESSURE PLUMBING, GASOLINE LAUNCH AND AUTOMOBILE WORK.

IN LENGTHS OF 12 TO 14 FEET AS FOLLOWS :

Plumb- ers' Size.	Outside Diameter.	Inside Diameter.	Approx. Weight per Ft. in Lbs. Brass.	Threads per Inch.	Length of Thread
5/8	.654	.521	.46	20	5/8
3/4	.768	.631	.56	20	5/8
7/8	.875	.728	.67	18	5/8
1	1.000	.836	.88	18	5/8
11/4	1.245	1.060	1.27	18	5/8
11/2	1.508	1.311	1.55	18	5/8
13/4	1.756	1.564	1.82	16	5/8
2	2.007	1.815	2.10	16	5/8

Bronze and Copper Tubes of above sizes made to order with reasonable promptness.

For use in connection with above we carry a full assortment of

"STAR BRAND"
BRASS FITTINGS.

Rough, Polished and Nickel Plated.

In Elbows, Tees and Couplings.

TRADE STAR BRAND

"STAR BRAND" Seamless Brass Condenser Tubes.

In 13 to 20 feet lengths. TINNED INSIDE AND OUTSIDE. 5% in. O. D. No. 18 Stubs' Gauge.

18 Above sizes carried for emergency calls, and customers

can cut to required lengths. We have special facilities for furnishing from mill with reasonable promptness, Condenser Tubes, all sizes, lengths and thicknesses in Brass, Muntz Metal or Admiralty Mixture, either tinned inside and outside, or plain.

"STAR BRAND"



Brass Condenser Tube Ferrules.



TRADE

BRAND

for % in. Condenser Tubes with Standard Thread. 3/4 11 44

Other sizes in Brass, also any size in Admiralty Mixture Condenser Tube Glands and Ferrules, shipped from Mill promptly.

★ HUNGERFORD ★

Compressed Paper and Fibre Condenser Tube Ferrules



for 5%" tube x 11/2" long. 11 3/11 11 11/6" "

Can furnish to order other sizes of Paper Ferrules and a complete line of sizes in Soft Wood and Fibre Ferrules.

We make a specialty of

Brass, Muntz Metal and Tobin Bronze Condenser Heads, Baifle and Supporting Plates. Also Bolts and Nuts in above metals, all sizes and styles.

Brass Fittings. Brazed a tron Line Tube. Electrical Goods. Rivets an Burs. Tacks and Nails. Hardware. Material.

> Weights Measures

"STAR BRAND"



Seamless Copper Tube.

HARD DRAWN.

IN 12 FEET LENGTHS.



Orders will be filled by **Stubs'** Gauge unless otherwise specified.

Outside Diameter. Inches,	Stubs' Gauge Exact.	Decimal Equivalents	Weight Per Foot In Lbs.
1/8	21	.032	.036
3 16	21	.032	.060
1/4	20	.035	.091
5 T 6	20	.035	.118
3/8	19	.042	.169
7 16	19	.042	.202
1/2	18	.049	.268
33	20	.035	.211
9 0 4	18	.049	.304
5/8	18	. 049	.342
3/4	17	.058	.486
7/8	17	.058	.574
1	16	.065	.730
1 1/8	16	.065	.830
11/4	15	.072	1.03
13/8	14	.083	1.30
1 1/2	14	.083	1.43
15/8	14	.083	1.55
1 3/4	13	.095	1.91

ANNEALED TUBES, ALSO SIZES AND LENGTHS OTHER
THAN SPECIFIED ABOVE, FURNISHED FROM MILL
WITH REASONABLE PROMPTNESS.

Sizes carried in Stock, ready for immediate shipment:

"STAR BRAND"

MARK Seamless Copper Tube. THADE STAR

TRADE,

BRAND

HARD DRAWN. IN 12 FEET LENGTHS.



Orders will be filled by Stubs' Gauge unless otherwise specified.

Outside Diameter. Inches.	STUBS' GAUGE EXACT.	DECIMAL EQUIVALENT.	WEIGHT PER FOOT In Lbs.
2	13	.095	1.93
2	14	.083	2.19
21/4	10	.134	3.43
21/4	12	.109	2.82
212	10	.134	3.84
21/2	12	.109	3.16
21/2	14	.083	2.44
23/4	10	.134	4.25
23/4	12	.109	3.49
3	11	.120	4.19
3	14	.083	2.93
31/4	10	.134	5.06
31/2	10	.134	5.47
31/2	14	.083	3.43
33/4	10	.134	5.87
4	10	.134	6.28
4	14	.083	3.94
4 1/4	10	.134	6.69
41/2	10	.134	7.09
43/4	10	.134	7.50
5	10	.134	7.91
6	10	.134	9.52

Can furnish to order any size Tube in either Brass or Copper (Seamless) from 1 inch O. D. to 10 inch, either inside or outside diameter.

ANNEALED TUBES, ALSO SIZES AND LENGTHS OTHER THAN SPECIFIED ABOVE, FURNISHED FROM MILL WITH REASONABLE PROMPTNESS.



Hardware

Material

Weights Measure Sizes carried in Stock, ready for immediate shipment :



HARD DRAWN. IN 12 FEET LENGTHS.

STAR

BRAND

Orders will be filled by Stubs' Gauge unless otherwise specified,

OUTS	IDE DIAN	ETER.	INSIE	E DIAME	TER.
Size.	Stubs' Gauge	Weight Per Ft. In Lbs.	Size.	Stubs' Gauge.	Weight Per Ft- In Lbs.
2	1 1	1.93	2	10	3.25
2	13	2.19	2	14	2.09
21/4	12	2.82	21/4	10	3.69
21/2	10 14	3.43 2.44	21/2	10	4.13
21/2	12	3.16	21/4	14	2.60
21/2	10	3.84	3	14	3.00
23/4	12	3,49			
23/4	10	4.25	3	10	5.03
3	14	2.93	31/4	10	5.49
31/4	10	4.19 5.03	31/2	14	3.59
3/2	14	3.43	31/2	10	5,90
31/2	10	5.47	33/4	10	6,30
33/4	10	5.87	4	14	4,10
4	14 10	3.94 6.28	4	10	6.71
41/4	10	6.69		10	7,12
41/2	10	7.09	41/4		7.52
41/4	10	7.50	41/9	10	
5	10	7.91	43/4	10	7.93
6	10	9.52	5¾	10	9.55

"STAR BRAND"

Seamless Copper Tube.

FOR COPPERSMITHS' USE. HARD DRAWN. INSIDE DIAMETER

IN 20 FEET LENGTHS.

11/2-13/4-2 - 21/2-3 - 31/3 and 4 in. Inside Diameter. All above diameters in stock in following thicknesses: Nos. 10, 12, 14 and 16 Stubs' Gauge.

Sizes carried in Stock, ready for immediate shipment:



"STAR BRAND" Seamless Copper Tube.



HARD DRAWN. IN 12 FEET LENGTHS.

I. P. S. Inches.	Weight Per Foot. In Lbs.	I. P. S. Inches,	Weight Per Foot In Lbs.
1/8	.26	1 ¼	2.63
1/4	.45	1 ½	3.15
3/8	. 65	2 1/2	4.20
1/2	. 95		6.04
1 3/4	$\frac{1.31}{1.79}$	3	8.72

OTHER SIZES UP TO 10 IN. MADE TO ORDER PROMPTLY.

Lengths other than 12 ft., also Tubes threaded one or both ends, furnished promptly.

"STAR BRAND"

Seamless Copper Tubes.

FOR AUTOMOBILE WORK.

Hard, §§ in. O. D. No. 20 Stubs 'Gauge in 11 ft. length Soft, ¼ in. O. D. No. 20 " " 12 " "

SIZES OTHER THAN SPECIFIED ABOVE SHIPPED FROM
MILL WITH REASONABLE PROMPTNESS

Brass Fittings.

> Brazed Iron Li Tube.

Goods.
Rivets a

Tacks and

Hardware.

Roofing Material.

Weights Measures

Telev

Sizes carried in Stock, ready for immediate shipment:



"STAR BRAND" Seamless Low Brass Lighting Tube.



FOR

PETROLEUM LIGHTING.

Nos. o, 1, 2 and 3.

This tube is **fully annealed**, suitable for bending. Put up in coils, in long lengths, as follows:

Nos. 0, 1 and 2, in bundles, of about 5 lbs. of a size.

WE ALSO FURNISH

Seamless

Brass, Copper and German Silver Tubing

OF SMALL DIMENSIONS

FOR

SURGICAL INSTRUMENTS, HYPODERMIC SYRINGES, ATOMIZERS.

And all other purposes where small diameters are required.

Made in sizes from

1-64 in. O. D. to 5-32 in. O. D. and thickness to No. 32, B. & S. Gauge.

Prices quoted on receipt of specifications.

SEAMLESS COPPER LIGHTNING ROD TUBES.

Square and Round, made to Order. Prices quoted on receipt of specifications.

TRADE

STAR

BRAND

PRICE LIST AND STOCK SIZES "STAR BRAND"



Seamless Copper Ferrules

For Setting Boiler Tubes.

MADE OF PURE COPPER



1	Inside Diameter	11/8	13/4	2	21/4	21/4	21/2	3	4
Inch	Width Inches	5/8	5/8	5/8	5/8	3/4	5/8	3/4	3/4
Thick	Price per 100	7.00	7.50	8.50	10.50	11.0	12.50	16.00	27,00
	Inside Diameter	. 1	1/9	13/4	17/8	1	7/8	2	2
16 Inch	Wid:h Inches		5/8	5/8	5/8	3	34	5/8	3/4
Thick	Price per 100	1	1.00	11.50	12.0	00 19	2.50	12.50	13.07
	Inside Diamete	r	21/8	21/4	21/2		3	3½	4
1 T6 Inch	Width Inches		3/4	5/8	5/8		5/8	3/4	34
Thick	Price per 100	1	5.00	16.50	18.	50 2	3.00	23.00	34,00

We make a specialty of the manufacture of these Ferrules, particular attention being given to accuracy of gauge, and uniformity of diameter. Can furnish either hard drawn or annealed. All sizes, from 1 to 4 inch diameter, and any thickness made to

order. Discount quoted on application.

Brass

Fittings.

Brazed a Iron Line Tube.

Electrical Goods.

Rivets an Burs.

Tacks and

Hardware.

Roofing

Weights &

gruph



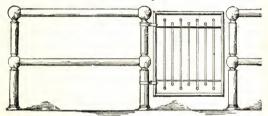
"STAR BRAND"

Brass Railing



for Churches, Theaters and Offices.

Brass Foot and Hand Rails of All Descriptions.



Estimates furnished on receipt of drawings and specifications.

"STAR BRAND" Brass Ball Fittings and



"STAR BRAND" Brass Kick Plates.

We are in position to supply Kick Plates and Push Plates of all sizes and forms.

Estimates furnished upon receipt of specifications.



DEPARTMENT No. 8.

BRASS FITTINGS.

Brass Fittings.

> Brazed Iron Li Tube.

Electrica Goods.

Rivets a Burs.

Tacks and Nails.

Hardware

Rooming Material.

Weights Measures

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BRASS, NICKEL-PLATED, AND TINNED FITTINGS. Price List of

	0	0	2			-	. 0	_	0	0		20	.0				10	10	10								
	10.00			:	:	:			14.00	_																	
	8.00	11.00	14.50	:	:	:		8.73	9.75	17.50	3	10.0.	.0.	5 ::													
3 inch.	4.50	0.6	9.30	:	:	:		5.65	6.25	11.30	11 60	11:00	9	0 0 0 0 0 0	2000	00055 00000	9923										
21.6 inch.	3.50	2.00	7.25	:	:	:		4.40	4.90	8.80	9.05		8.73	4.17	8.75 7.77	5.4 5.7 5.7 5.7 5.7 5.7	3.75 7.75 7.75 7.75	27.75 7.75 7.75 7.75									** * * * * *
2 nch	1.50	3.00	3.20	2.75	8 .23	5.50	5.75	1.90	2.30	3.80	4.00		1.80	1.80 2.15	2.38 3.15 8.65	2.80 2.80 3.80 3.80	1.80 2.15 3.60 3.80	8.80 8.15 8.80 8.80 8.80 8.80	8.80 8.80 8.80 8.80 8.80	3.80 3.80 3.80 3.80 3.80	2.80 2.15 2.80 3.80 3.80 3.80 3.80 3.80	2.15 2.15 3.86 3.86 5.15 5.15 5.15 5.15	2.1.80 2.1.50 3.1.50 3.1.50 3.1.50 3.1.50 3.1.50				
11/2 inch.	1.10	2000	2.40	2.00	 	4.00	4.25	1 40	1.65	2.80	3.00	1	104.	1.63	2.80 2.80 3.80	- = 8 8 8 9 9 9 9 9 9	2.63 2.80 3.00 	2.80 3.00 3.00	3.00	3.808.809.809.80	3.00	2.00 3.00 3.00 3.00	30.00	3.00		- 1 68 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	2.00 2.00 3.00 3.00 67.1 3.50 1.70 3.50 1.70
11/4 inch. i	0.85	20	1.90	1.55	80	3,10																					
inch. ir			20	10	.35	2.20								_													
34 inch ir	0.35					1.76	_		65	06	90	.50		02.			5.835										
	0.28					242			20	20	86	300		200													5588888988844488
k 1/2 inch	0.21				100	96.1	16 1	96	40	66						00.49								0,0,0,0		6,2,2,2,2,2	0.0.0.000
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SIZE		1	Finished	icke-	with side outlet, Kough		Finished	an.	Reducing, Rough		Finished	anc	: .	Inned			and Nickel-Plated	N pur	and Nick								
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	Rou h.	:	nished	:	ith sid				educir	*	: :	: 6	s, Rough	:		Fin	Fin	ows,	ows,]	ows,]	ows, l	Elbows, 1			Fin ows, J	Prin ows, 1	
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DISCOUNT QUOTED ON APPLICATION.

Continued on next page.

BRASS, NICKEL-PLATED, AND TINNED FITTINGS.—Cont. PRICES ARE FOR EACH FITTING. Price List of

SIZE.	178 inch.	¼ inch.	inch.	inch.	inch.	inch.	inch.	1½ inch.	inch.	inch.	3 inch.	3½ inch.	4 inch.
Tees, Rough	0.15	0.30	0 30	0.40	0,50	_	1.00	1.30	1.75	4.00	5.50	00 6	
Tinned	.25	.31	.45	.58	.73		1.25	1.70	2.30	4.75	9	50 10.50	15.00
Finished	.30	.40	.60	8.	1.00	_	2.00	2.60		8.00	Ξ	18.00	
and Nickel-Plated	.40	55	97.	86.	1.18			3.85		8.30	=	18.60	
" Keducing, Rough	:	25	88	55.	.63	_		1,65		5.00	9	11.25	
Tinned	:	.36	.53	.68	98.	_	_	2.05		5.75	2	12.75	
Finished	:	.50	.76	1.00	1.25	-		3.30	_	10.00	3	22.50	
" and Nickel-Plated		.62	.92	1.18	1.43		2.75	3.55		10.30	14	23, 10	
Drop Tees, Rough	:	:	8.		1.30			:					
Tinned	:	:	1.10		1.60		_						
Finished	:	:	1.45		2.10		_					:	:
" and Nickel-Plated	:		1,65		2.35		_					:	
Unions, Ground Joint, Rough.	255	.40	55		1 00		_	0	4 00	6 50	02	:	:
" Tinned.	25	54	74		33			500	4 70	400	0 0	:	:
" Finished	32	.36	50		06			9.50	3 80	6.00	3 4.	:	
" and Nickel-Plated	09	5	84		1.51			3 79	20.00	8	10.70	:	:
Crosses, Rough	:	.30	.40		9.			2 00	3.50	200	2.0	10.00	14 5
" Tinned	:	.43	320	.71	68			2.80	4.65	6.45	808	12.50	17.5
Finished	:	.60	-80	_	1.20			4.00	2.00	10.00	14.00	20.00	29.0
and Nickel-Plated	:	92.	1.00	_	1.42			4.35	7.40	10.45	14.55	20.80	30.0
Reducing, Rough	:	88.	.50	.65	.75			2.50	4.40	6.25	8.75	12.50	180
Tin ed	:	.51	.68		1.04			3.30	5.55	7.70	10.55	15.00	210
Finishe	:	10	1.00		1.50			5.00	8.80	12.50	17.50	25.00	36 0
" and Nickel-Plated	:	.9	1.20	1.55	1.73			5.35	9.20	12.95	18.05	25.80	37.0
ouplings, Rough	10	14	.16		. 327			6.	1.35	2.40	3.50	2.00	9
Tinned	02.	53.	88		22			1.10	1.65	2.75	4.10	5.70	2 00
Finished	8	88	33		5			1.80	2.70	4.80	2 00	10 00	19.00
and Nickel-Plated	.28	.38	.45		68.		1.40	2.00	2.80	5.05	7.30	10.40	12.50

Brazed Iron Li Tube.

Electrica Goods.

Rivets a Burs. Tacks and Nails.

Hardware

Roofing Material.

Weights Measures

BRASS, NICKEL-PLATED, AND TINNED FITTINGS.—Cont. PRICES ARE FOR EACH FITTING. Price List of

SIZE.	1/8 inch.	14 inch.	3% inch.	1/2 inch.	34 inch.	1 inch.	11/4 inch.	1½ inch.	2 inch.	21/2 inch.	3 inch.	31/2 inch.	4 inch.	
Couplings, Right and Left, Rough		0.17	0.20	0.30	0.45	09.0	0.75	1.12	1.75	:	:	:	:	_
Tinned		23.	35	.45	09.	8.	.95	1.32	2.02	:	:	:	:	-
" Finished		65	36	.55	88	1.10	1.35	2.00	3.10	:	:	:	:	-
" and Nickel-Plated		41	49	.68	96	1.25	1.55	2.30	3.30	:	:	:	:	-
Reducers, Rough		16	8	35	45	.65	06.	1.12	1.85	3.00	4.50	:	:	_
Tinned		26	.84	37	09	38.	1.10	1.32	2.15	3,35	5.10	:	:	_
" Finished		33	44	.64	06.	1.30	1.80	2.25	3.70	6.00	9.00	:	:	_
" and Nickel Plated		.42	.57	22.	1.04	1.45	200.8	2.45	3.90	6.25	9.30	:	:	-
Cans Rolloh	.15	15	. 20	.25	35.	.45	09.	08.	1.10	2.00	3.00	:	:	_
Tinned	.25	.25	.30	.35	.45	55	.73	.95	1.27	2.25	3.35	:	:	_
" Finished	30	30	040	.50	02.	8.	1.20	1.60	202.20	4.00	6.00	:	:	-
and Nickel Plated	.37	3	. 50	63	88	1.05	1.32	1.77	2.38	4.20	6.25	:	:	_
Pluss Robeh	60.	.10	.12	.15	20	88	.40	35.	06.	1.25	8.00	8	_	_
	.17	18	. 20	.25	.30	.38	.52	.62	1.05	1,45	2.25	3.30		_
Finished	30	200	.24	.30	.40	.56	80	1.00	1.80	2.50	4.00	6.00	8.00	_
" and Nickel Plated.	25	27.	35	.40	20	99.	06.	1.12	1.95	2.65	4.20	6.25	_	_
Locknuts. Rough		10	12	.15	20	.30	.45	02.	.95	1.50	2.75	:	:	-
	:	.18	.20	.25	.30	.40	.57	82	1.10	1.70	3.00	:	:	_
Finished		08.	.24	30	.40	.60	06.	1.40	1.90	3.00	5.50	:	:	_
" and Nickel-Plated		.27	.31	38	05.	.70	1.00	1.52	2.05		5.75	:	:	
Return Bends, Open, Rough,		:	35	.48	.94	1.35	2.28	2.90	5.30	8.20	11.00	:	:	_
Tinned			.52	72	1.25	1.70	28.82	3.90	6.60	_	13.80	:	:	_
" Finished		:	2.15	2.56	3.30	4.00	5.25	6.45	9,10	_	17.50	:	:	-
" " and Nickel-Plated.			2.35	2.76	8.40	4.25	5.50	6.75	9.50	14.00	18.40	:	:	_
" Close Ronoh			.30	.45	200	1,15	1.8	2.50	3.90	_	œ.	:	:	
Tinned		:	.50	. 68	1.06	1.46	2.30	3.42	5.00	2.60	9.80	:	:	_
" Finished		:	2.10	2.50	3.10	3,75	4.70	5.85	2.50	11.00	14.45	:	:	_
" and Nickel-Plated.	:	:	2 30	2.70	3.30	4.00	4.95	6.15	7.90	11.50	15.00			- 1

DISCOUNT QUOTED ON APPLICATION.

Continued on next page.



(Shoulder Nipples.) Price List of BRASS NIPPLES.

PRICES ARE FOR EACH NIPPLE.

				-			-					
TPE SIZE.	LENGTH EACH.	CLOSE.	1 1/2 in.	2 in.	2½ in.	3 in.	3½ in.	4 in.	4½ in.	5 in.	5½ in.	6 in.
1/8 in.		0.16		-	0.22	0.25	0.28	0.31	0.34	ι.	0.40	0.43
		. 20			.58	. 32	.36	.40	.44			90.
3/8 ((:	. 23	.23		. 33	986	.43	.48	.53			89.
1/2 ;;		30			.42	.48	.54	09	99.			.84
34	:	. 32	:	.39	.46	.53	.60	67	74			.95
,,	:	.40	:	.49	.58	.67	.76	85	94			1.31
1,7	:	.63	:		.75	.87	66	1.11	1.23			1.59
1 1/2	:	74	:		88.	1.02	1.16	1.30	1.44			1.86
3	:	1.00	:		1.19	1.38	1.57	1.76	1.95			2.53
2/2 "	:	1.89	:	:	:	2.04	2,32	2.60	2.88			3.73
3 3		2.50	:	:	:	2.80	3.20	3.60	4.00			5.20
37/2	:	4.00	:	:	:	:	:	5.10	5.68			7.43
	:	4.75	:	:				5.86	6.53			8.54
1/2 ,	:	00.9	:	:				7.20	8.01			10.44
		8.50	:	:					10.30	11.35		13,45
;		11.50	:	:	:	:	:		13.65			17.85

DISCOUNT QUOTED ON APPLICATION.

Brazed fron Lin Tube.

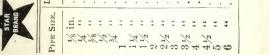
Electrica Goods.

Rivets Burs. Tacks and Nails.

Hardware.

Roofing Material.

Weights & Measures.



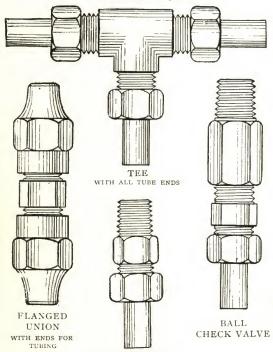
Sizes carried in Stock, ready for immediate shipment:



AUTOMOBILE FITTINGS,



And Tubing Connections for Oil, Water, Gasolene and Steam Pipe.



UNION COUPLING

In addition to the above illustrations we are in a position to furnish all other sizes and styles of connections for Automobile or Motor Boat work.

PRICES FURNISHED ON APPLICATION.



"STAR BRAND" AUTOMOBILE FITTINGS,

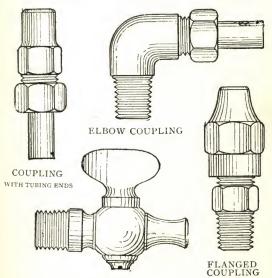


And Tubing Connections for Oil, Water, Gasolene and Steam Pipe.



OCTAGON GROUND JOINT UNION

GROUND JOINT UNION



PET COCK

In addition to the above illustrations we are in a position to furnish all other sizes and styles of connections for Automobile or Motor Boat work.

PRICES FURNISHED ON APPLICATION.

Brazed ar Iron Line Tube.

Electrical Goods.

Burs.
Tacks and

Hardware.

Nails.

Rooling Material.

- Weights a Measures

graphic

Sizes carried in Stock, ready for immediate shipment:



"STAR BRAND"

BRASS FITTINGS.



Rough, Finished and Nickel Plated.







Elbows	inch to	4 i	nch.
Bushings	4.6	3	4.4
Tees	٠.	4	6 6
Unions, Ground Joint	4.6	3	6 6
Crosses	4.6	4	4.6
Couplings ¹ /8	4.4	4	4.4
Reducers	6.6	3	6.6
Caps	6.4	3	"
Plugs	6.6	4	4 6
Locknuts	. 6	3	4 4
Return Bends ³ /8	4.	3	4.6
Nipples	4.4	6	6.6

FLANGES AND VARIOUS OTHER BRASS FITTINGS FURNISHED PROMPTLY FROM MILL.

TINNED FITTINGS FURNISHED AT SHORT NOTICE.

COPPER AND SPECIAL COMPOSITION FITTINGS MADE TO ORDER.



DEPARTMENT No. 9.

Brazed and Open Seam Tube,

Brass, Bronze, Copper, German Silver and Zinc.

Iron Lined Tube,

Brazed, Close and Lock Joint,

ALSO

Angle, Channel and Moulding.

Brazed a Leon Lin Tube.

Electrica Goods.

Rivets an Burs.

Tacks and Nails.



PRICE LIST OF

"star brand"
Brazed Tube.



Brown & Sharpe's Gauge the Standard, Outside Diameter.
Plain Round Tube.
Date
Brass, Brazed
Extra Over Base Price in Cents per Pound.
34 in. up to 2 in to No. 19 inc. BASE 58 1 cts. per lb. 58 102. Add to base 1 cts. per lb. 36 102. Add to base 1 cts. per lb. 36 102. Add to base 3 cts. per lb. 16 102. Add to base 102. Add to base 16 102. Add to base 102. Add to base 16 102. Add to base 3 cts. per lb. 16 102. Add to base 3 cts. per lb. 16 102. Add to base 3 cts. per lb. 2 inch to 19 B. & S. incl. add to base 5 cts. per lb. 31/2 inch. 102. Add to base 102. Add to base 10 102. Add to base 102. Add to base 10 102. Add to base 102. Add to base 10 102. Add to base 102. Add to base 10 102. Add to base 103. Add to base 10 102. Add to base 103. Add to base 10 103. Add to base 103. Add to base 10 103. Add to base 103. Add to base 10 103. Add to base 103. Add to base 10 103. Add to base
No. 20 21 22 23 24 25 26 26 2 4 6 8 12 16 20c, per lb.
Thinner than No. 26 B. & S. Gauge, special prices All Tubes between gauge2 take price of next thinner gauge, Per Lb. Square and Fancy Tube, add to above
Extra Fancy Patterns,

For Cutting to Special Lengths.

]	?	e	r	I	b	
Long	ger	than	12 i	nch	es																		89	0	.01	i
Over	r 6	inche	s to	12	inc	h١	es		٠				 												.12	3
		6.6			1						 														.09	3
	2	4.4	6.6	4		L																			.(14	ł
4.	1		6.6	2		٠		 ,																	.00	;
Shor	ter	than	1 in	ch.					٠			,	 		. !	S	p	e	С	ia	ı	Į	P	r	се	

To determine price of Rectangular Tube add extras according to list price of Round Tube of a diameter equal to shortest side.



PRICE LIST OF "STAR BRAND" Brazed ZINC TUBE.



Plain, to No. 19 B. & S. Gauge, inclusive\$0.32
Fancy, " 19 "38
Scotch and Extra Patterns, ditto
For Open Seam Tube. 4 cents per lb. less than above
prices of corresponding diameter and thickness.
Add the Brass Tube List advances for numbers sizes
and cutting to length.
Discount quotes on application.

PRICE LIST OF

Brazed German Silver Tube.

4	per	ce	nt.	to	No	.19	B.& S.	Gauge,	incl.	\$0.60	per 1b.
6		6 6	1		4.4	19	. 66	44	6.6	.70	
9		6.6			6.4	19	6.6	"	4.6	.85	4.6
12		4.4			4.4	19	6.6	+ 6	4.4	1.00	6 +
15	4	4 4			4.4	19	6.6	6.6	4.4	1.15	6.6
16	•	6.6			4.4	19	6.6	4.4	4.4	1.20	6.6
18		66			6 6	19	4.6	4.6	4.4	1.30	4.6

Add the Brass Tube List advances for numbers, sizes and cutting to length.

Discount quoted on application.

"Star Brand" Brass Mouldings.



Brown & Sharpe's Gauge the Standard. Brass, half-round and half-oval to

Electrical Goods.

> Rivets and Burs.

Tacks and

Hardware.

Roofing Material.

Weights & Measures.

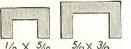
Telegrantiic



Price List of "STAR BRAND"

BRASS AND BRONZE CHANNEL.





3/1 × 3/8

High Brass to No. 19, B. & S. Ja. Base per lb. to No. 19. B. & S. Ga Base Bronze

Same advances for Athine Gan 19 B. & S. gauge and cutting to length as Brazed Tube. See page 118
Can furnish any regular size of thickness promptly.
In ordering specify width, depth, and thickness required.
The following size of complete tools.

The following sizes carried in stock:

In 12 to 14 Feet Lengths,

No. 10 B. & S. Ga. - x x 3/8 and 3/8 x 3/4 in.

3/8 x 1/2, 3/8 x 5/8 and 3/8 x 3/4 in. 18 $\frac{2}{3}$ 8 x $\frac{1}{2}$, $\frac{3}{8}$ x $\frac{5}{8}$ and $\frac{3}{8}$ x $\frac{3}{4}$ in.

In addition to above sizes we also furnish from Mill promptly, a large variety of other dimensions in Brass and Bronze.

"STAR BRAND"

BRASS AND BRONZE ANGLE.

Date.... High Brass to No. 19, B. & S. Ga.....Base per lb. to No. 19, B. & S. Ga..... Base Bronze

Same advances for thinner than 19 B. & S. gauge and cutting to length as Brazed Tube. See page 118.

We have tools to make the following sizes:

No. 10, B. & S. Ga., 3/8, 1/2, 5/8, 3/4, 7/8, and 1 in.

3/8, 1/2, 1/6, 5/8, 3/4, and 1 in. " 14. " 18, 14, 3/8, 1/2, 5/8, 3/4, 7/8, and 1 in.

Special shapes, sizes and thickness made to order. The following sizes carried in stock:

BRASS ANGLE

In 12 to 14 Feet Lengths.

No. 14 B. & S. Ga. - 1/2 x 1/2, 3/4 x 3/4 and 1 x 1 in.

"STAR BRAND" Brass and Bronze Door Rail.





Lighter than 18 B. & S. Gauge, advance of 2c. per pound for each number.

BRONZE DOOR RAIL—7c. per pound advance over list of Brass Rail.

Discount quoted on application.

No. 18 B. & S. Gauge, 1 34 1 11/8 11/4 inches wide. Weight per foot, 5 23/4 3 33/4 4 ounces.

The following sizes carried in stock.

"STAR BRAND"

BRASS DOOR RAIL

All No. 18, B. & S. Gauge.

1 '' '' x 4 - 5 - 6 & 8 feet long '' x 4 - 5 - 6 & 8 '' '' x 4 - 5 - 6 & 8 '' '' '' x 4 - 5 - 6 & 8 '' ''

Widths and thicknesses also special lengths other than above shipped from mill promptly.

BRONZE DOOR RAIL-All sizes made to order only.

Electrical Goods.

Burs.

Tacks and

Hardware.

Rooting Material.

Weights & Measures

l elegraphic

TRADE MARK. STAR BRAND

Price List of

"STAR BRAND"



Brazed Taper Tubes.

Extras over base price of Brazed Brass Tub	e:
SI W 5	Add o Base
For Tubes Weighing 21/2 Fiss. each, and heavier	
For Tubes weighing 211s, each and not heavier	
than 216 lbs. each co	.55
For Tubes weighing 116. each, and not heavier than 2 lbs. each	.65
For Tubes weighing 12 oz. each, and not heavier	
than 16 of each Q	.75
For Tubes weighing 8 each, and not heavier than 13 oz, each.	.85
For Tubes weighing 4 oz. each, and not heavier than 8 oz. each.	.95
	.95
For Tubes weighing lighter than 4 oz. each, special price not less than	1.65

"STAR BRAND" Iron Lined Tube.

BRAZED, CLOSE JOINT AND LOCK SEAM.

			, 0100	_	٠	~	•••	•	•	•	•••	•	_	_	_	_	•••	OLKIN.		
																		Per 100	Feet.	
																	I	3rass.	Bronz	e
3/8	inch,	not	polished														.\$	8.00	\$ 9.00	0
1/2		4 -	4.6															8.00	9.00	0
1/2 5/8 3/4 7/8	4.6	6.6	6.6															10.00	11.00	0
3/4	6 4	6.6	6.6															12.00	13,00)
7/8	4.6	. 6	+ +															14.00	15.00	0
1		4.4	4.4										_					18.00	20.00	0
11/8	6.6	4.4	+ +															22.00	24.00	0
11/4	4.4	4.4	4 4															25.00	27.00	0
11/2	4.4	6.6	4.4		. ,									٠				32.00	35.00	0
134	6.6	4.4	4.4															45.00	48.00)
$\frac{134}{2}$	4.4	4.4	6.6															56 00	60.00)

In lengths from 2 feet to 12 feet. For Polishing see page 123. Discount quoted on application.

Price List for

Polishing, Polishing and Lacquering, Polishing and Nickel Plating



"STAR BRAND" BRAZED BRASS, BRONZE and COPPER TUBE.



Outside Diameters.	Polishing.	Polishing and Lacquering.	Polishing and Nickel Plating
Inches.	Cts. per ft.	Cts. per ft.	Cts. per ft.
1/4	1 1/2	2	. 3
3/8	1 1/2	2	2
1/2	1 3/4	21	21
5/8	$1\frac{4}{5}$	22	$2\frac{2}{5}$
3/4	$2\frac{1}{5}$	21/2	21/2
7/8	21/4	2 5/8	25/8
1	2 1/2	23/4	23/4
11/8	23/4	27/8	27/8
11/4	3	31/8	31/8
13/8	31/4	33/8	33/8
1 ½	33/8	3 1/2	3 1/2
1 5/8	3 1/2	33/4	334
13/4	33/4	4	4
1 1/8	4	4 1/4	4 1/4
2	4 1/4	4 1/2	4 1/2
21/4	4 1/2	4 3/4	43/4
2 1/2	5	51/4	51/4
23/4	5 1/2	53/4	53/4
3	6	61/4	61/4
31/4	6 1/2	63/4	63/4
3 ½	7	7 1/2	71/2
33/4	734	9	9
4	8 1/2	11	11

Are prepared to furnish other finishes such as Old Brass, Rich Gilt, Brush Brass, Oxidized Copper, etc. Prices on application.

Electrical Goods.

Rivets and Burs.

Tacks and Nails.

Hardware.

Material.
Weights

Illustrations of Fancy Patterns.



"STAR BRAND" BRAZED BRASS TUBE.



Brown & Sharpe's Gauge the Standard.



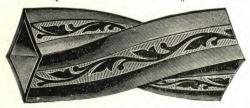
No. 746. FANCY. Can furnish $1\frac{1}{16}$ and $2\frac{1}{8}$ inch. No. 20.



No. 745. FANCY.

Can furnish inch. No. 18.

5 inch. No. 1. 7 inch. No. 1..



No. 759. EXTRA FANCY.

Can furnish $\frac{1}{2}$ inch to 1 inch. Nos. 16 to 20.

In addition to above patterns we make a very large assortment of other designs and will be pleased to mail illustrations covering full line on application. Illustrations of Fancy Patterns.



"STAR BRAND" BRAZED BRASS TUBE



Brown & Sharpe's Gauge the Standard.



No. 769. EXTRA FANCY.

Ca furnish from % inch to 1 inch outside diameter. Nos. 16 to 20.



No. 723. EXTRA FANCY.

Can furnish from 1/2 inch to 1 inch outside diameter. Nos. 16 to 20.



No. 772. EXTRA FANCY.

Can furnish from 3/4 inch to 2 inch outside diameter. Nos. 16 to 20.

In addition to above patterns we make a very large assortment of other designs and will be pleased to mail illustrations covering a full line on application.



126 U. T. HUNGERFORD BRASS AND COPPER CO.

Illustrations of Fancy Patterns.



"STAR BRAND" BRAZED BRASS TUBE.



BROWN & SHARPE'S GAUGE THE STANDARD.



No. 751. SPECIAL.

Combination Gas and Electric Tubing.
Can furnish $\frac{8}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{8}{8}$, $\frac{7}{8}$, and 1 inch.

No. 16 Gauge.



Can furnish 60 sizes, from $2\frac{1}{2} \times \frac{1}{2}$ inch to $\frac{1}{2} \times \frac{3}{16}$ inch, in gauges No. 16 to 20.



No. 757. FANCY.

Can furnish
inch. Nos. 17 and 21.



No. 752. EXTRA FANCY.

Can furnish

inch. No. 22.

No. 753. FANCY. Can furnish $\frac{1}{9}$ inch. No. 20.

In addition to above patterns we make a very large assortment of other designs and will be pleased to mail illustrations covering full line on application. Sizes carried in Stock, ready for immediate shipment:



"STAR BRAND" Rrazed Brass Tube.

STAR BRAND

12 TO 14 FEET LENGTHS.

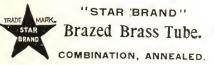
Plai	n R	ou	nd	Ha	rd			Ro	Pla	iin dS	oft	F	lar top	е	Sott Rope	Hard S	Square
Diam. B. & S. Gauge				B. a Gar				aug		B. & S. Gauge							
3 16				18						_	_	L					
1/4				18				_	_	_	22	_					
5 16				18				_	_	19	_	_					
3/8			17	18			24	17	18			18			18	18	
7 1 6				18				17	18						18		
1/2			17	18		22	24	17	18			18	22		18	18	
916				18		П											
5/8		_	17	18		22	24						22	24		18	22
3/4		Π	17	18		22	24						22	24		18	22
7/8		Ī	17	18		22	24	_				_	22	24		18	22
1	П		17	18	20	22	21	-				Γ	22	24		18	22
11/8		_	-	18			-	_				Γ					
11/4			17		20								_				
13/8	-		17	-	20									-			
1½		15	17	-	20			-				-					
15/8		Γ	17	-	-									-			
134	-	15	17	1	20		1	Γ									
17/8	-						1										
2	14		17		20)	-	1	-	-		1					
21/4	14	-	17		-			1	-	-		-	-				
, 21/2	14	-	17	-	1	1		1	-				-				

Plain Round Hard for Railing Work, 20 to 22 feet lengths. 1½ in. O.D. 15 B. & S. 2 in. O.D. 15 B. & S. 2 in. O.D. 17 B. & S.

We also make a large variety of Fancy Patterns Brazed Tube, illustrations of which will be mailed on application.



Sizes carried in Stock, ready for immediate shipment:



D.

BRAND

No. 18 B. & S. Gauge 3/8, 1/2, 5/8, in. Outside Dia.

"STAR BRAND"

Iron Lined Brass Tube.

BRAZED, CLOSE JOINT AND LOCK SEAM

BRASS BEDSTEAD, ART FURNITURE AND
RAILING WORK.

OUTSIDE DIAMETER.

3/8, 1/2, 5/8, 3/4, 7/8, 1, 11/4, 11/2, 13/4, 2 inch.

ALL ABOVE IN LENGTHS OF 12 TO 14 FEET.

SIZES OTHER THAN ABOVE, ALSO SPECIAL LENGTHS,

SHIPPED FROM MILL PROMPTLY.

STAR BRAND"



Iron Lined Brazed Brass Tube



FOR

BRASS BEDSTEAD, ART FURNITURE AND RAILING WORK.

Our Tube is made of the highest quality of steel, and the covering of a rich brass mixture.

The Brass covering is extra heavy for this work, is carefully drawn over the steel shell and thoroughly brazed, giving a smooth surface. This, together with the finish of brass covering, reduces amount of labor in polishing to a minimum.

"STAR BRAND" Iron Lined Close Joint Brass and Bronze Tube.

For those desiring an Iron Lined Brass Tube of moderate cost, we make a CLOSE JOINT Tube. which possesses the advantages of low cost, smooth surface, and fine seam. This tube can be easily polished, and is susceptible of a high finish. It is especially adapted for IRON BEDS, CURTAIN RODS. and wherever straight tubes are in use, and the difference in cost between this and the Brazed Iron Lined is an important item to the manufacturer.

Electrical Goods. Rivets and Burs. Tacks and Hardware. Material. Weights & Measures.



"STAR BRAND" BRAZED



Brass, Copper and Bronze Tubing.

Plain Round, Square, and Fancy Shapes,

FOR

GAS FIXTURE and

ELECTROLIER WORK,

PLUMBING and

RAILING WORK,

SPEAKING TUBES,

PUMP CHAMBERS.

AND VARIOUS OTHER PURPOSES.

BRAZED

Copper Tube for Lightning Rods.

Special attention given to Tubes for BICYCLE PUMPS and other purposes requiring smooth finish for Polishing and Nickel Plating.



DEPARTMENT No. 10.

COPPER WIRE

AND

ELECTRICAL GOODS,

ALSO

ECK DYNAMOS AND MOTORS.

Electrical Goods.

Rivets and Burs.

Tacks and Nails.

Hardware.
Roofing
Material.

Weights & Measures.

graphic Curle



"STAR BRAND" HARD DRAWN COPPER WIRE,



For Use as Trolley Wire, Long Distance Telephone and Telegraph Lines.



Put up on reels in continuous lengths of one-half to two miles, according to requirements,

SOFT DRAWN COPPER WIRE, EITHER TINNED OR PLAIN.

ROUND AND FLAT COPPER BARS, For Use in Central Stations, or Other Electrical Purposes.

In all Sizes.

PRICES FURNISHED ON APPLICATION.



ELECTRICAL COPPER WIRE

"STAR BRAND"



Price List of

BARE WIRE, SOFT AND HARD DRAWN.

The BASE Price to-day is c. per lb.

The price covers sizes printed "Base."

BROWN & SHARPE'S GAUGE

On sizes finer than No. 8 B. & S. Gauge add the advances stated in list to the "Base" price as above mentioned.

No.	0000 to 8 Base	9 & 10	11 & 12 1/4	13 & 14 ½c. per lb. adv.
No.	15 & 16 34	17 1	18 1	19 & 20 1¼c. per lb. adv.
No.	21 & 22	23 2½		24 2½c. per lb. adv.

Above prices are net.

No. 16 and coarser on reels, or in coils.

No. 17 to 20 on large spools, or in coils.

Finer than No. 20 on small wooden or iron spools, or in coils

All our wire is furnished in long pieces and drawn accurately to gauge.

Rivets and Burs. Tacks and Hardware. Material.



Price List of "STAR BRAND" TINNED COPPER WIRE.



With a smooth surface and a superior bright finish.

Extras over price of Plain Wire.

B. & S. GAUGE

No.	0000 to 8	9 and 10	11 and 12	2 13 1 c.per 1b.adv.
No.	14	15 and 16 1	17	18 and 19 1 1/4 c. per lb. adv
No.	20 1½	$\begin{vmatrix} 21 & 22 \\ 134 & 2 \end{vmatrix}$		24 3 c. per 1b. adv.

Made to order at short notice. Furnished either in coils, or on reels or spools.

Price List of "STAR BRAND"

18% GERMAN SILVER RESISTANCE

BROWN & SHARPE'S GAUGE

	18	ROWN	& AHAI	RPE'S	GAUGE.
7.7	0000	ICE PER P	00 Vb.	9	PRICE PER LB.
No.	10000 te	11	\$0.78	No.	28\$1.40
	(15% / 10)	1		6.6	29 1.55
2006	16.		46	4.6	30 1.75
	17	CO.	330	6.6	31 1.95
W	18,	8	80	4.4	32
4.6	19		83	4.4	33 2.60
4.4	20		.83	6.6	24
1.6	21		.95	6.6	05
4.4	22		.98		
4.4	23		1.03		36 6.50
4.6	0.4		1.08	4.6	3711.50
6.6	25				3818.00
6.6			1.08		3923.00
			1.14	4 6	4030.00
	27		1.25		

DISCOUNT ON APPLICATION.

Put up in long lengths on reels, spools, or coils. Drawn accurate to gauge. We can also furnish 30% High Resistance Wire.



"STAR BRAND"

ELECTRICAL COPPER WIRE.



Rase Price....

BARE WIRE, SOFT AND HARD DRAWN.

	B. & S. Gauge,	Old English Gauge.	Extras Per Lb.
No.	25 (.0179)	27 (.01875)	
4.6	26 (.01594)	$29 (.0155) \dots$	
6 6	27 (.014195)	20 (01955)	
4 6	28 (.012641)	21 (01995)	
4.4	29 (.011257)	32 (.01125)	
4.6	30 (.010025)	33 (.01025)	
4.4	31 (.008928)	$34 (.0095) \dots$	
	32 (.00795)	35 (.0085)	
6 1	33 (.00708)	0.0 1	
4 4	34 (.0063)		
6.6	35 (.00561)	. 90 (00000)	
6.6	36 (.005)	39 (.005)	
٠ 6	37 (.00445)	40 (0045)	
4.6	38 (.003965)	11	
6 6	39 (.003531)	49	
6.6	40 (.003144)	43	

PRICES ON APPLICATION.

Put up on small wooden or metal spools, in very long lengths, or in coils.

Our Electrical Copper Wire is made only from selected Refined Copper made especially for our work, and will always be found uniform in gauge, and of exceptionally high conductivity and tensile strength. Our facilities for prompt delivery, of even large quantities, may always be relied on.





"star Brand" Commutator Brush Copper.



IN ROLLS.

Date.......Base Pricects. per lb.

Advance Over Base.

Numbers B. & S. Gauge,	Over 2 in. to 12 inches	Over ½ in, to 2 in, Inclusive	Over ¼ in to ½ in. Inclusive	14 Inch and Narrower
23	Base	1	2	6
24	2	3	4	8
25	6	7	8	12
26	6	7	8	12
27	8	9	10	24
28	8	9	10	24
29	14	15½	17	26
30.	14	15 1/2	17	26
31	18	191/2	21	30
32	18	191/2	21	30
33	22	25	28	40
34	22	25	28	40
35	23	26	29	41
36	24	27	30	42
37	24	27	30	42
38	25	28	31	43

Above is cold rolled spring temper, made especially for Dynamo Brushes from Pure Lake Superior Copper specially selected for this purpose.

Particular attention given to have uniform thickness throughout end also to have it slit true and with smooth edges.

We also make **Battery Coppers**, any size or thickness, joined together with rivet and gutta-percha insulated wires.

Prices Quoted on Application.



"STAR BRAND"

TRADE MARK. STAR BRAND

HARD DRAWN

COPPER COMMUTATOR BARS.

Segment Shaped.

We have tools for drawing about 1,200 different sizes, varying in dimensions from .037 in. thin edge by .107 in. thick edge by $_{16}^{5}$ in. wide, to .2325 in. thin edge by .2815 in. thick edge by 5% in. wide.

These segments are drawn to perfect dimensions with less than .001 in. variation, and require no machining of their sides. They are hard and dense, perfectly solid, are free from blow-holes and other imperfections and are made from Pure Lake Superior Copper specially selected for this work.

Prices quoted on receipt of specifications showing requirements.

HIGHEST CONDUCTIVITY GUARANTEED.

HARD DRAWN COPPER BUS BARS.

Also Round and Square Copper Rods.

Can furnish any width or thickness, perfectly true and smooth, same as segment copper.

PRICES QUOTED ON APPLICATION.

DRAWN ZINC RODS.

For Battery and Other Purposes.

Made from Finest Grades of Spelter.

Round, Square, Rectangular or Segment Shape.

In long random lengths or cut to particular lengths

Prices Quoted on Application.





"STAR BRAND" PURE COPPER ANODES OR BATTERY PLATES



Our "STAR BRAND" High Grade Anodes are made from absolutely pure Lake Copper specially selected for the purpose—rolled, not cast—thus giving the essential density lacking in cast plate.

Many large consumers of Anodes commend the quality of our product and rely on us for their supply.

We carry in stock for prompt shipment plates 18 x 25 x 3-8 in. thick, with 1-2 in. holes in each corner, and can furnish promptly any other size or thickness required.

Prices quoted on application.



"STAR BRAND"

COPPER



LIGHTNING CONDUCTORS.

We make a specialty of Copper Lightning Conductors as follows:

- Stranded Copper Cable, made from 7 or 28 wires to make cable about $\frac{3}{8}$ in. diameter.
- Flat or Round Copper Rod, soft or hard, in long lengths.
- Square Copper Rod, soft or hard, in long lengths.
- Plain Round Copper Tube, Brazed or Seamless.
- Twisted or Cable Pattern Brazed Copper Tube.
- Copper Lightning Rod Points and Connections.

Correspondence solicited.





"STAR BRAND"

PURE COPPER WIRE.



HARD DRAWN AND SOFT.

For All Electrical Purposes.

HIGHEST CONDUCTIVITY GUARANTEED.

Brush and Battery Copper.

Annealed and Hard.

Pure Electrical Copper Battery Plates.

For Electrotyping.

Switch=Board Copper.

In all Shapes.

Pure Drawn Copper Commutator Bars,

In Long Lengths or Cut to Size.

Round and Rectangular Pure Drawn Copper Bars.

Drawn Zinc Battery Rods.

Purest Quality.

In Long Lengths or Cut to Size.

Eck Dynamos and Motors.

FOR DIRECT CURRENT.



FRAME 1, 2 AND 3, PROTECTED TYPE.

SLOW, MEDIUM AND HIGH SPEEDS.

Special Motors made to suit the requirements of the trade. First class in every detail.

Guaranteed for one year against imperfection in manufacture.



FRAME 112, 18, 16.

Rivets ar Burs. Tacks and Hardware Material

> Weights Measure

Eck Motors, Protected Type.

Horse		No. of	Dia. of		LIST I	PRICES
Power	Speed	Frame	Pulley	Weight	115 Volts	230 Volts
1-32	1000	116	1 in.	11 lb. [23.00	
1-24	1500	116	1 "	11 "	22.00	
1-24	900	112	1 "	15 "	25.00	1
	2000	116	1 "	11 ''	20.00	23.00
1-16	1350	112	1 "	15 "	25.00	
	900	18	11/4 "	18 "	29.00	1
	2700	116	1 "	11 "	20.00	23,00
1-12	1800	112	1 "	15 ''	23.00	27.00
	1200	18	11/4 "	18 "	28.00	
	2700	112	1 '	15 .	24.00	28.00
1-8	1800	18	11/4 "	18 ''	26.00	30.00
1-0	1350	16	11/2 "	22	34.00	
	800	14	2 "	40 11	49.00	59.00
	2400	18	11/4 "	18 "	26.00	30.00
1-6	1800	16	11/2	22 11	32 00	36,00
1-0	1050	14	2 "	40 "	49.00	59.00
	800	13	21/2 "	55 ''	65.00	75.00
	2700	16	11/2 "	55	37.50	41.50
1-4	1600	14	2	40 ''	50.00	54.00
1-4	1200	13	21/2	55 '	65,00	75.00
	750	12	31/2 "	80 11	75.00	85.00
	2150	14	2 "	40 ''	50.00	54.00
1-3	1600	13	31/2 "	55 "	60.00	65.00
1-5	1000	12	31/2 "	80 11	75.00	85.00
	750	34	31/2	124 "	99.00	109.00
	2400	13	31/2	55 '	60.00	65.00
1-2	1500	12		80 "	70.00	75.00
1-%	1000	34	31/2 "	124 ''	99.00	109.00
	700	1	4 " "	207 "	124.00	130.60
	2250	12	31/2 "	80 "	70.00	75.00
3-4	1500	34	31/2 "	124 "	94.00	99.00
9-4	1050	1	4 "	207 "	124.00	130.00
	700	11/2	,	276 "	144.00	150.00
	2000	34	31/2 "	124 "	94.00	99.00
4	1400	1	4 "	207 "	120.00	124.00
1	935	11/2	4 "	276 "	144.00	150.00
	640	2	5 "	330 **	164.00	167.00

Prices of 500 volt Motors on application.

Motors of ¼ H. P. and larger are furnished with Cutler-Hammer No Voltage Release Rheostats. Frames No. 1 and larger are furnished with sliding base and drip pan combined.

All the above machines can be mounted on wall, ceiling or floor.

Eck Motors, Protected Type.

Horse	Speed		Dia, of	XX7 - 1 - 1 - 1	LIST 1	PRICE
Power	Speed	Frame	Pulley	Weight	115 Volts	230 Volts
	2100	1	4	207	120.00	124.00
4 - /	1400	11/2	4	276	140.00	144.00
1 1/2	950	2	5	330	164.00	167.00
	600	3	5	410	204.00	207.00
	1875	1 1/2	4	276	140.00	144.00
2	1275	2	5	330	160.00	164.00
io .	850	3	5	410	204.00	207.00
	550	4	6	430	234.00	234.00
	1900	2	5	330	160.00	164 00
3	1200	3	5	410	200.00	204.00
9	825	4	6	430	234.00	234.00
	690	5	7	570	260.00	260.00
	1720	3	5	410	200.00	204.00
4	1100	4	6	430	230.00	234.00
4	920	5	17	570	260.00	260.00
	500	712	8	660	330.00	330.00
	1325	4	6	430	230,00	234.00
	1100	5	7	570	260.00	260.00
5	665	712	8	660	330.00	330.00
	500	10	8	790	400.00	400.00
	1375	5	7	570	260.00	260.00
6	800	712	8	660	330.00	330.00
O	600	10	8	790	400.00	400.00
	400	15	10	1130	480.00	480.00
	1000	712	8	660	330.00	330.00
71/2	750	10	8	790	400.00	400.00
1 /2	500	15	10	1130	480.00	480.00
	360	20	12	1280	620.00	620.00
	1330	712	8	660	330.00	330.00
10	1000	10	8	790	400.00	400.00
10	665	15	10	1130	480.00	480.00
	450	20	12	1280	620.00	620.00
13	600	20	12	1280	620.00	620.00
15	1000	15	10	1139	480.00	480.00
20	900	20	12	1280	620.00	620.00

Prices on 500v. Motors on application.

Rivets ar Burs.

Tacks and Nails.

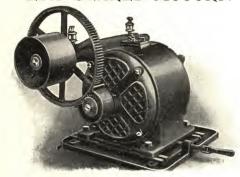
Hardware

Roofing Material

Weights Measure

Tele graphi Cotte

ECK GEARED MOTORS.



Ъ.	pa	rame	of	Pu	lley		List Pri	ce
II. I	Speed	No. of Frame	Ratio of Gearing	Dia.	Face	115 Volts	230 Volts	500 Volts
1 2	400	112	4.5	21/2	17/8	43.00	45.00	
1/8	400	18	4.5	21/2	1 7/8	46.00	50.00	
1 ₋	400	16	4.5	21/2	17/8	52,00	56.00	
1/4	300	14	5.4	3 1/2	21/4	75.00	79.00	87.00
1/3	300	13	5.4	3 1/2	21/4	85.00	90.00	98.00
1/2	275	12	5.4	5	31/4	100.00	105.00	112.00
1	300	1	4.6	6	4	160.00	164.00	170.00
2	275	2	4.6	7	4 1/2	205.00	209,00	214.00
3	260	3	4.6	8	5	260.00	264.00	269.00
4	160	4	7	10	7	290.00	294.00	294.00
5	160	5	7	12	8	320.00	320.00	320.00

Frames No.14 and larger are furnished with No Voltage Release Starting Rheostat. Frames No. 1 and larger are turnished with sliding base and drip pan combined. Guaranteed for one year against imperfections in manufacture.

Eck Dynamos, Protected Type.

	Spe	eed 125	me	ley	ht	1	List Pric	е
K. W.	115 230 volts	250 500 volts	No. of Frame	Dia. of Pulley	Net Weight	115 volts	230 volts	500 volts
.035	3000	3300	116	1	11	\$23.00	\$26.00	\$
.06	2500	2700	112	1	15	25.00	29.00	
.11	2400	2600	18	11/4	18	28.00	32,00	
.16	2300	2400	16	1 1/2	22	34.00	38.00	
.25	2000	2125	14	2	40	53.00	57.00	65.00
.33	1950	2075	13	21/2	55	63.00	68.00	77.00
.50	1800	1920	12	31/2	80	74.00	79.00	87.00
.75	1800	1920	34	31/2	124	98.00	103.00	110.00
1.0	1650	1770	1	4	207	126.00	130.00	134.00
1.5	1450	1550	1 1/2	4	276	147.00	151.00	155.00
2.0	1350	1450	2	5	330	168.00	172.00	178.00
2 5	1250	1350	3	5	410	210.00	214.00	219.00
3.5	1250	1350	4	6	430	241.00	245.00	245.00
4.5	1250	1350	5	7	570	273.00	273.00	273.00
6.5	1125	1225	712	8	790	340.00	340.00	340.00
8.5	1100	1200	10	8	790	410.00	410.00	410.00
12.	1100	1180	15	10	1130	485.00	485.00	485.00
15.	1000	1060	20	12	1280	620.00	620.00	620.00

¹ K. W. is sufficient current for 18 Incandescent Lamps 16 C. P. each.

Frames 14 and larger are furnished with Field Rheostats.

Frames 1 and larger are compound wound. Frames 1 and larger are furnished with sliding base and drip

pan combined.

Guaranteed for one year against imperfections in manufacture.

Rivets and Burs. Tacks and Nails. Hardware.

Weights

Measures



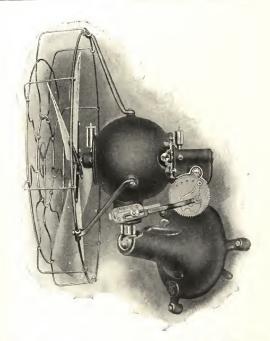
Eck Hurricane Oscillating Fans.

For Direct Current.

Noiseless, Positive and Durable.
Will oscillate from side to side in any position.
May be used either as desk or wall fans.

Gears operate in an oil case, insuring constant lubrication. Three speed rheostat in base.

Far superior to any other type of fan motor.



Eck Hurricane Oscillating Fans.

AS USED FOR WALL FAN.

For Direct Current.

Simple in Construction. Perfect in Operation.

Cool a much larger space than ordinary fans, one taking the place of two or more and producing a much more agreeable breeze.

Made in two sizes, 12 and 16 in. dia. of blades, with motors of suitable power.

Highly recommended by physicians.

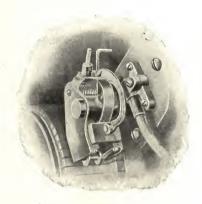
Rivets a Burs.

Tacks and

Hardwar

Roofin; Materi

Weigh



BRUSH HOLDER USED IN ECK MOTORS AND GENERATORS.

FRAMES NO. 1 AND LARGER.

An illustration of the excellent design and work-manship found throughout the Eck Motors and Generators.

Strong, Durable and Efficient.

Every machine is guaranteed to be capable of carrying a load equal to its full rated capacity continuously, without overheating or deterioration.

The Best Goods at Reasonable Prices.
All Speeds and Voltages.



DEPARTMENT No. 11.

"STAR BRAND"
COPPER AND BRASS RIVETS
AND BURS.



Weight:



"STAR BRAND"

COPPER



RIVETS AND BURS.

MADE FROM BEST SELECTED LAKE SUPERIOR COPPER AND WITH EXTRA LARGE HEADS.

PRICE LIST OF

Copper Belt and Hose Rivets and Burs.

REVISED JULY 1ST, 1898.

Numbers	3-7	8	9	10	11	12	13	14	15
In Bulk	49	50	52	54	56	58	60	65	70clb
Uniform lengths, packed in 1 lb. or 4 lb. boxes	49	50	52	54	56	58	60	65	70c "
Uniform lengths, packed in ½ lb. or ¼ lb. boxes.	52	53	55	57	59	61	63	68	73c '
Uniform lengths, packed in ¼ lb. boxes	55	56	58	60	62	64	66	71	76c "
Assorted lengths, % to ¾ inch, packed in 1 lb. boxes	52	53	55	57	59	61	63	68	73c ''
inch, packed in ½ or ¾ lb. boxes	55	t 6	58	60	62	64	66	71	76c "
Assorted lenghts, % to ¾ inch, packed in ¼ lb. boxes	57	58	60	62	64	66	68	73	78c ''

Date

Freight allowance of ½c. per lb, (if ordered in not less than 1001b. lots), on the net weight of goods F. O. B. Factory or New York.

TERMS: Sixty days, or 2 per cent. for cash if paid within 10 days from date of invoice.

Tinning Rivets or Burs 2 cts. per lb. net additional

Each size and kind packed in cases containing 100 lbs.

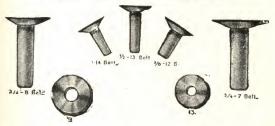
Special Brass or Copper Rivets and Burs made to order, prices of same depending on quantity and kind required.



"star Brand" Copper Rivets and Burs.



Copper Belt Rivets and Burs.



Nos. 5 to 15, all lengths, equal quantities of Rivets and Burs, in 1 lb. boxes, uniform lengths.

Nos. 7,8 and 9, assorted lengths, 3/8 to 3/4 inch, in 11b. boxes.

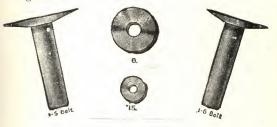
Nos. 7, 8, 9, 10 and 12, assorted lengths, 3/8 to 3/4 inch, in 1/2 lb. boxes, packed in 5 lb. cartons.

Nos. 7, 8 and 9, assorted lengths, 3/8 to 3/4 inch, in 1/4 lb. boxes, packed in 3 lb. cartons.

Copper Belt Rivets.

PACKED WITHOUT BURS.

Nos. 5 to 15, all lengths, in 1 lb. boxes, uniform lengths.



Copper Burs Only.

Nos. 3 to 15, in 1 lb. boxes, uniform sizes.

Tacks an Nails.

Hardwa

Tele graph Code.

Mater

Weigh Meast



OVAL HEAD. (Length measured under head.)

OVAL HEAD. (Bength measured under head.)									
Nos No, to lb Dia. of shank Length, under head	$\begin{array}{c c} 00 & 0 \\ 160 & 148 \\ \frac{5}{32} & \frac{16}{16} \\ \frac{5}{16} & \frac{3}{38} \end{array}$	1 66 14 12	2 3 49 37 17 32 14 5/8	4 28 28 5 18 16 3	6 19 3/8 13	7 8 13 8 7 17 15 17 15 11/8	9 10 6 5 5/8 31 11/4 11/4		
FLAT HEAD COPPER 1-4 in. Diameter of Sh No. to lb	ank	rs. (Lengt	h mea 1 36	sured	under	head.)		
5-16 in. Diameter of S No. to lb	hank		3/4	1 24	114	1 1/2			
3-8 in. Diameter of Sh No. to lb	ank	1	1½ 15	$\frac{1\frac{3}{8}}{13}$	$\frac{116}{12}$	2 10			
1-2 in. Diameter of Sh No. to lb	ank	9	1¼ 8	13/8	1½ 6	2 5	46		

PRICES QUOTED ON APPLICATION.



"STAR BRAND"



COPPER RIVETS AND BURS.



Copper Hose Rivets, Flat Heads.

PACKED WITHOUT BURS.

Nos. 7 and 8, lengths 1/4 to 1 inch, in 1 lb. boxes, uniform lengths.

Oval Head Copper Trunk Rivets.

PACKED WITHOUT BURS.

No. 9, lengths 1/4 to 13/4 inch, in 1 lb. boxes, uniform lengths.

No. 12, lengths 1/4 to 3/4 inch, in 1 lb. boxes, uniform lengths.

Oval Head Copper Trunk Rivets and Burs.

No. 9, lengths 3/8 to 7/8 inch, equal quantities of Rivets and Burs, in 1 lb. boxes, uniform lengths.

Tacks and Nails.

Hardwar

Roofing
Materia

o leie-

Weight



"STAR BRAND"

Copper and Brass Rivets.





Flat Head Copper and Brass Tinners' Rivets. In Packages of 10 0.



34, 1, 14, 1½, 2, 2½, 3 and 4 lb. to M.

Oval Head Brass Jacket Rivets.



LENGTH MEASURED UNDER HEAD.

Length $\frac{1}{4}$ $\frac{3}{16}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{3}{16}$ inch. Thickness 7 8 8 9 12 13 gauge



Special Copper and Brass Washers.

Made to Order in About 3 Days.

IN BULK AND IN 5 LB, BOXES.









co	D	D	C	D	

		COPPER.						
For Bolt	Outside Dia:	Thickness	For Bolt					
3 in.	½ in.	.050 in.	3/8 in.					
3 44	9 66	.045 ''	1/2 "					
7 46	5/8 "	.052 ''	5/8 11					
1/ 11	5% "	.065 ''	3/4 ''					
1/4 "	11 11	.068 ''	7/8 "					
5 44 TE	3/4 "	16 "	1 "					

Outan	10 011	il a	HILLKING	33
1	in.		1 ir Stubs	1.
13/8	4.4	12	Stubs	Ga
13/4		10	4.6	4.6
2	h 6	10	6.4	4 (
21/4	4.4	9	4.4	6

Auteida Dia Thickness

BRASS

		DICASS.						
For Bolt	Outside Dia.	Thickness	For Bolt					
3 in.	½ in.	.050 in.	1/2 in.					
1/4	5/8 "	.065 ''	5/8 "					
5 · · ·	3/4 "	16	3/4 11					
3/0 11	1 "	1 66	7/2 6.					

Outsid	de Dia	. T	Thickness				
13/8	in.	12	Stubs	Ga.			
13/	4.6	10	6.6	6.6			
2	6.6	10	6.6	4.6			

Also Nos. 7, 8, 9, 10 and 12 Brass Burs.

SPECIAL SIZES

COPPER OR BRASS RIVETS AND BURS

Countersunk Head Copper or Brass Rivets.



Length Measured Over Ali.

IN BULK AND IN 5-LB. BOXES.

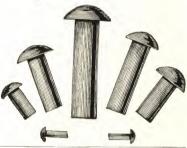
Len. \% \% \% \% 1 1\% 1\% in.

Dia. \frac{3}{6} \frac{1}{4} \frac

Oval Head Copper and Brass Rivets.

Length Measured Under Head.

IN BULK AND IN 5-LB. BOXES.



Dia, of Shank				Le	ength.			
1/8 in. 3 in. 1/4 in. 1/5 in. 3/8 in.	1/2	1/2 5/8	5/8 3/4	3/4 7/8	3/8 7/8 1 3/4	1 1 1/8 1	3/8 3/4 11/4 11/4 11/4	1½ in. 1 in. 1½ in. 1½ in. 1½ in. 1½ in.

Cone Head Copper Rivets.



PRICES QUOTEED ON APPLICATION.

We have tools for all sizes of Oval and Countersunk Rivets mentioned above and can ship ordinary orders within 3 days. Can also furnish Special Rivets, any style or size at short notice. Tacks and Nails.

Hardware.

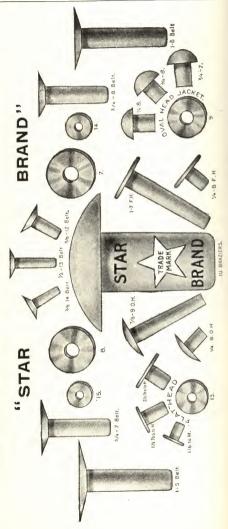
Roofing Material.

Weights &

Measures.

COPPER AND BRASS RIVETS AND BURS.

Manufactured from the Best Selected LAKE SUPERIOR COPPER.





DEPARTMENT No. 12.

NAILS AND TACKS.

COPPER, YELLOW METAL, &c.



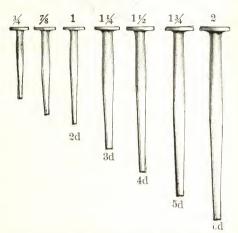
Weights



REGULAR CUT



FOR BOAT WORK, ETC.



½ 5% ¾ % 1 1¼ 1½ 2 2¼ 2½ 2¾ 3-3¼ ir. long. 2 3 4 5 6 7 9 10 12 d. 3½ 3¾ 4 4¼ 4½ 5 5½ 6 in. long. 16 20 30 40 50 60 d.

These Nails are rounded under the head, allowing the wood to contract above the flare, and preventing them from working loose.

We carry all sizes ½ in. to 6 inches long in stock packed in 5 lb. paper boxes, also in bulk in cases of 50 lbs. each. Other sizes made to order promptly.

Can also furnish promptly from Mill all above sizes in Yellow Metal, Zinc and Tobin Bronze.

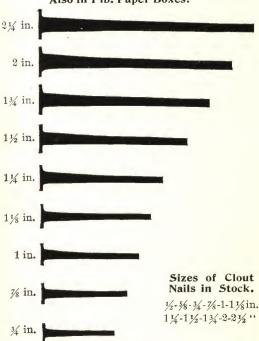
"STAR BRAND"



COPPER CLOUT NAILS.



IN CASES CONTAINING 50 LBS. EACH.
Also in 1 lb. Paper Boxes.



Cut Copper Finishing Nails. %, ¾, ½, 1, 1¼ and 1½ in.

Oval Head Copper Trunk Nails.

 $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, 1, $\frac{1}{4}$ and $\frac{1}{2}$ in. PRICES QUOTED ON APPLICATION.

Hardware

Roofing Materia

> Weight. Measur

"STAR BRAND"



MARK. Copper Wire Nails.

Packed in kegs containing 100 lbs. each. (Sizes correspond with Steel Wire Nails.) Also in 5 lbs. Paper Boxes.



No. 10. in. 21/2 in. No. 11. 21/4 in. No. 11. in. No. 12. 13/4 in. No. 12. 1111111 1½ in. No. 13. 11/4 in. No. 14. in. No. 15.

Sizes of Wire Nails in Stock by Stub Gauge.

14 58 34 78 1 114 112 134 2 24 2 12 In.
16 16 14 14 15 11 & 14 11 & 13 12 10 & 12 9 & 11 8 & 11 Ga

234 3 34 312 4 412 5 6 In.
10 9 & 10 9 8 6 5 4 2 Ga.

PRICES QUOTED ON APPLICATION.

"STAR BRAND"



Copper Wire Slating and Shingle Nails.



Large Heads.

PACKED IN KEGS CONTAINING 100 LBS.
Also in Paper Boxes containing 5 lbs

	AISO III							
1/8 in. lo	ng,				No.	12	Stubs'	Gauge.
1 "	44				6.6	12	6.6	"
11/4 "	44				6.6	10	4.6	6.6
11/4 "	"				6.6	11	4.6	6.6
11/4 "	"				4 6	12	6.6	4.4
11/2 "	44				4.6	10	6.6	4.4
11/2 "	44				44	11	4.6	6.6
11/2 "	44				6.6	12	4.4	6.6
7/8		1			11/4			11/2
No. 12	S. G.	No. 12 S	3. G	No.	11 S	. G.		
							37	0.0

No. 10 S. G.

Copper Wire Purlin Nails.

BLUNT POINT.

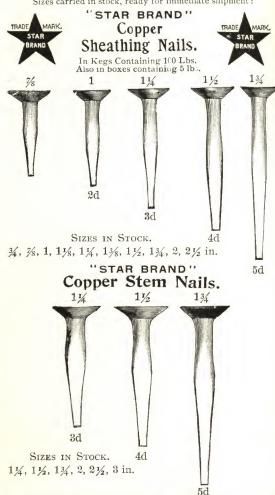
Can furnish any thickness of Wire or any length up to 6 inches. Also a full line of Copper, Brass and Phosphor-Bronze Wire Nails, same sizes as Standard Steel Nails, or Special Sizes, made to order promptly.

Hardware.

Roofing Material.

Weights & Measures.

graphic



We also furnish promptly from Mill, Composition Spikes, all sizes. Also Zinc Nails, same sizes as above.

"STAR BRAND" Cut Copper Slating Nails MARK. TRADE STAR Large Flat Heads STAR BRAND BRAND Packed in kegs containing 100lbs. Also in boxes containing 5 lb. 3d. 5d. 6d. Ħ

"STAR BRAND" Yellow Metal Slating Nails.

Packed in kegs of 100 lbs. Also in bo Also in boxes containing 5 lbs. 3d. 4d. 5d. 6d. in Can also furnish promptly from Mill all sizes of Cut Zinc Slating Nails.

Hardware. Material. Weights Measures

graphic



We also furnish promptly from Mill, Composition Spikes, all sizes. Also Zinc Nails, same sizes as above.

"STAR BRAND"



COPPER NAILS.

ALL SIZES AND STYLES.





The above cut shows **one-sixth** size of boxes in which we pack our Copper Nails.

The following sizes carried in stock:

REGULAR CUT.

4 % 1 14 14 13 2 24 25 23 3 34 in. d.

 $\frac{3\frac{1}{2}}{16}$ $\frac{4}{20}$ $\frac{4\frac{1}{2}}{30}$ $\frac{5}{40}$ $\frac{5}{50}$ $\frac{5}{60}$ d.

Packed in neat pasteboard boxes, containing 5 lbs. each, or in bulk, in cases, containing 50 lbs. each.

For Illustrations, see page 158.

PRICES QUOTED ON APPLICATION.





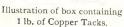
"STAR BRAND"



COPPER TACKS.







Price List.

Sizes carried in stock: OVAL AND FLAT HEAD.

16 3/8 1/2 9 5/8 in. 11/2 3 4 6 8 10 oz. \$1.50 \$1.10 90c 80c 70c 60c 56c 56c 56c per 1b.

> $\frac{1}{1}\frac{5}{6}$ 7/8 1 11/8 11/4 in. 12 14 16 18 20 22 24 26 oz. 56e 56e 56e 56e 56e 56e 56c per 1b.

> > 1 1/2 1 3/4 2 in. 30 34 40 oz. 56c 56c 56c per 1b.

Packed in pasteboard boxes, containing I lb. each. Also in 1/2 or 3/4 lb. boxes to order, at an advance of one cent per 1b. net.

We can also furnish Brass Tacks, oval and flat head, same as Copper (in 1 lb. boxes or in bulk).

DISCOUNT QUOTED ON APPLICATION.



DEPARTMENT No. 13.

HARDWARE.



"Anvil Brand" Soldering Coppers.



HAND FORGED.



Pointed Pattern.



Flat Bottom Pattern.



Swivel
Hatchet Pattern.

Hand Forged, Guaranteed Not to Crack in Repointing.

Pointed Pattern 1 lb. to 12 lbs. to pair Flat Bottom Pattern 2 " to 8 " Swivel Hatchet Pattern 3 " to 7 "

Packed in Cases, Containing 25 Pair Each Size.



Roofing Pattern,

with handles and shields, 8, 9, 10, 11, 12 and 14 lbs. to pair.

Packed in Cuses, Containing 12 Pair Each Size.

Can furnish promptly from Mill, a variety of Special Patterns, illustrations of which will be sent on request.



SOLDERING COPPERS

PRICE

Swivel Handle Hatchet Coppers add 5½c. to above prices.

Rigid Handle Hatchet Coppers add 3c. to above prices.

Pointed Soldering Coppers having handles 7 in. long, $\frac{5}{18}$ and $\frac{3}{8}$ diameter, weighing 2 lb. per pair to 6 lb. per pair inclusive, (known as the Boston Pattern) take an extra price of 1c. per lb. over the price of corresponding sizes of regular pointed coppers.

A large and well assorted stock of the above always on hand.

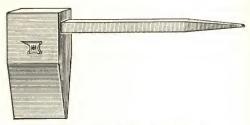
For illustrations and stock sizes see page 168.

PRICES QUOTED ON APPLICATION.



"ANVIL BRAND"

SOLDERING COPPERS.



Rigid Handle Hatchet Coppers.



Floating Pattern.



Tillery Capping Pattern.

All our ANVIL BRAND Coppers are made from Lake Superior Copper smelted specially for our use, are hand forged, NOT CAST, and are guaranteed not to crack when heated for repointing.

The Shanks are made of Best quality refined Iron, and so forged to bolts as not to loosen from the effects of fire.

Any special style of Soldering Coppers made to order.

PRICES QUOTED ON APPLICATION.

The above patterns are not carried in stock. Can furnish promptly.

U. T. HUNGERFORD BRASS AND COPPER CO. 1691

MEMORANDA.





"STAR BRAND" Brass Spelter Solder.

For Brazing Copper, Brass and Steel.



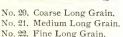
For the convenience of the Trade, we pack, if requested, sizes mentioned below in neat **one pound** paper boxes, also in **Tin Cans** with Screw Cap, containing **10** and **25 pounds each**, as per illustrations.

Also in Bulk as Follows:

Nos. 20 and 21—100 lbs. in a case All others — 50 lbs. "







No. 23. Extra Fine Long Grain.



No. 21 Coarse Long Grain. No. 25. Fine Round Grain.

No. 26. Extra Fine Round Grain No. 27. XX Fine Round Grain.

Gray Solder for fine Brass Brazing—free flowing, specially adapted for Gas Fixture Work.

No. 10 Medium.

No. 12 Fine.

Other grades, both coarse and fine, also grades of Special Composition furnished from Mill promptly.

No. 41. Special Fine Grain.

PRICES QUOTED ON APPLICATION.



"STAR BRAND"



SILVER SOLDER.

For Brazing Band Saws and Various other Goods, Where a Specially High Quality of Solder is Required.



We make a specialty of the above and guarantee to furnish an article **unsurpassed** by any in **t**he market.



This cut is exact size of 1-oz. box containing Silver Solder.

Stock Sizes Packed in Round Paper Boxes Containing 1 OZ., Also in Cartons Containing 16 One=Oz. Boxes.

3/4-inch	wide	x	.003	or	No.	40	Stubs'	Gauge	thick
7/8-inch	wide	\mathbf{x}	.003	or	No.	40	4.6	"	4.4
5%-inch	wide	\mathbf{x}	.003	or	No.	40	6.6	6.6	4.4
5%-inch	wide	\mathbf{x}	.004	or	No.	36	6.6	6.6	4.4
34-inch	wide	\mathbf{x}	.004	or	No.	36	4.4	4.4	6.6
7/2-inch	wide	X	004	or	No	26	4.4	4.6	6.6

We make to order other widths and thicknesses and put it up in coils of 1 lb. or over when required, can also furnish in **Wire** form if desired.



Solder.

 $\frac{1}{2}$ and $\frac{1}{2}$ and Commercial Grades.

Always the Same and Absolutely Dependable.



No. 1 Wiping ... in blocks and bars Star Brand, Commercial ½ and ½ ... in bars Anvil Brand, Extra ½ and ½ ... "

Warranted half and half, special ... "

Packed in Cases of 250 pounds.

Hungerford's Best.....

Wire Solder.

No. 14 S. G. put up in 1-lb. coils, each coil in separate carton.

No. 11 S. G. in bundles containing about 25 lbs.

Our Solders are always the same. Each brand made after an exact formula and uniform quality guaranteed.

PRICES QUOTED ON APPLICATION.

Sizes carried in Stock, ready for immediate shipment:

TRADE : MARK. STAR BRAND

"STAR BRAND"

COPPER HAMMERS





These Hammers are made from selected Pure Copper, are smoothly finished and have perfect faces.

Date Base.

PRICE LIST.

3	Ib.	ea	ch	and	1 he	eav	ier		~		-		~		_		-		_	-	Ba	ase
216		4.4	-		-	-				-		***		-				-		Add	1c.	16.
2		6.6		-	-				-						-		_		-		2c.	4.4
11/2		6.6	-		_	-		-		-				•		-		_		4.4	Ec.	6.6
1		4 6		~			_		-		_				_		_		-	4.6	6c.	4.4
34		t t	_		_	_		_		_						_		_		1.6	tc.	
1/2		+ 6		_			_		_		_				_					4.6	1 0	

We carry the following sizes in Stock:

 $\frac{1}{2}$, $\frac{3}{4}$, 1, $\frac{1}{2}$, 2, $\frac{2}{2}$, 3, $\frac{3}{2}$, 4, 5, 6, 8 12 and 16 lbs. each.

Other sizes up to 20 lbs. each, made specially.

We also make to order a full line of Copper Sledges, Octagonal Shape, made from Solid Bars.



Sizes carried in Stock, ready for immediate shipment:



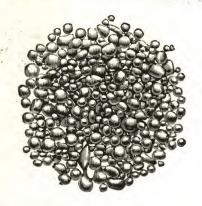
"STAR BRAND"



COPPER ALLOY.

For Use In Manufacture of

GOLD AND SILVER PRODUCTS.



Guaranteed .999 Fine or Substantially Chemically Pure.

Large Consumers Give It Their Unqualified Endorsement.

PACKED IN 10 LB. PAPER PACKAGES, IN CASES CONTAINING 100 LBS.

SMALL TRIAL SAMPLES SENT FREE ON APPLICATION.

PRICES QUOTED ON APPLICATION.

PRICE LIST OF GENUINE SPUN BRASS KETTLES.



-								-
Inc	hes	Qts	Price each	Price per doz.	Inches	Qts	Price each	Price perdaz.
7 x	41/2	2	\$0.43	\$5.13	10 x 11	24	\$3.21	338.47
8 x	5	4	. 64	7.69	17 x 11 1/2	C32	3,83	46.17
9 x	6	6	1.07		18 x 12	140		58.12
10 x	7	8	1.28	15.39	19 x 13	48	\$5.81	69.74
11 x	8	10	1.50	17.95	20×14	56	7.67	92.05
12 x	9	12	1.71	20.52	22 x 15 1/2	(82	9.30	111.60
13 x	91/2	16	2.14			100		153.42
14 x		18	2.46	29.50	26 x 18 %	128	16.04	192,50
15 x	101/2	20	2.78					

Carried in stock, a full assortment of above ready for immediate shipment:

BRASS KETTLES.

Heavily Plated Inside with Pure White Metal.

PATENTED JULY 23, 1889; NOVEMBER 12, 1889.

List prices same as above. Made only in sizes from 4 Quarts to 32 Quarts, inclusive.

DISCOUNT QUOTED ON APPLICATION,

Roofing Material.

Weights & Measures.

"STAR BRAND"

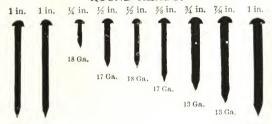


BRASS ESCUTCHEON PINS.



Made from best selected Brass Wire drawn especially for this purpose, with Perfect Heads and Points. Heads warranted not to break in Riveting.

ROUND HEADS.



16 Ga. 17 Ga.

12 Ga.

List Price per Pound of Round Head Brass Pins.

		11	n on	e po	oun	d pa	per	DO:	xes.				
Length Inches.	3	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	11/4	1 1/2	13/4	2
Stubs Wire Gauge 10 11 12 13 14 15 16 17 18 19 20 21 22	1.20 1.35 1.55 1.75	1.00 1.10 1.20 1.35 1.55	1.00	$\frac{1.20}{1.35}$	$\frac{1.15}{1.30}$.92 1.00 1.10 1.30	1.10	1.15	.69 .70 .71 .72 .73 .74 .80 .90 1.03 1.15	.68 .69 .70 .71 .72 .74 .80 .92	.67 .68 .69 .70 .72 .74 .80 .92 1.05	.74 .81 .93	66 67 69 70 72 75

Nicksl and Silver Plated, 20 cents per lb. advance on above list prices.

A Full assortment of Round Head Brass Escutcheon Pins

packed in 1 lb. boxes carried in stock.

Brass Barbed, Nickel Plated and Headless Escutcheon Pins, also Special Brass Pins and Rivets of Every Description Made to Order.

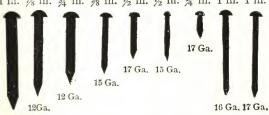
DISCOUNT QUOTED ON APPLICATION.



Price List. "STAR BRAND" Iron Escutcheon Pins.



1 in. 1/8 in. 1/4 in. 1/4 in. 1/4 in. 1/4 in. 1 in. 1 in.



10 Ga.
List Price Per Pound of Round Head Iron Pins.

IN ONE POUND PAPER BOXES.

Length Inches	3 1 6	1/4	3/8	1/2	5/8	3/4	7/8	1	11/8	11/4	11/2	134	2
Stubs' Wire													
Gauge		- 1							1 8				
10			.29	.26	.24	.23	.22	.21	.20	.19	.17	.17	.16
11			.29	.26	.24	.23	.22	.21	.20	.19	.17	.17	.16
12					. 26								
13			.34	.30	.28	.26	.24	.23	.22	.20	.19	.19	.19
14			.37	.33	.30	.27	.24	.23	.23	.21	.20	.20	.20
15		.44	.40	.36	. 32	.28	.25	.24	.24	. 23	.22	.22	. 22
16		.47	.42	.37	. 33	.29	.26	.25	.25	.24	.24	.24	.24
17		.49	.44	,39	. 35	.31	.28	.27	27	.26	.26	.26	.26
18		.52	.47	.42	.37	. 33	.30	.29	.29	.28	.28	.28	.28
19		. 62	.52	.47	.42	.37	.35	.35	.35	. 35	.35		
20	1.02	.82	.67	.57	.47	.42	.42	.42	.42	.42			
21	1.22	1.02	.87	.77	62	.57	.57	.57					
22	1.32	1.12	.97	.87	.72	.72							

Flat or Round Head Iron or Steel Pins, all sizes, for all purposes, made to order.

In ordering Iron or Steel Pins, state if Hard or Soft Pins are required.

Our Escutcheon Pins are made from best selected Wire, drawn especially for this purpose, with perfect Heads and Points. Heads warranted not to break in riveting.

Roofing Material.

> Weights & Measures.

graphic Cigle.



"STAR BRAND"



WROUGHT BRASS BUTT HINGES.

Adopted Oct. 26th, 1906.

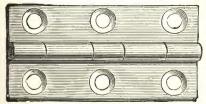
PRICES ARE PER DOZEN PAIR.

Number of Pair in each Box,	SIZE.	BROAD.	MIDDLE.	NARROW.	DESK
6 Dozen	1/2	\$0.28	\$0.26	\$0.24	
6 "	3/4	.32	.30	. 28	\$0.40
6 "	7/8	.36	.34	. 30	.50
6 ''	1	.40	.38	.32	. 60
6 ''	1 1/8	.48	.44	.40	.72
6 "	11/4	.54	.48	.46	.84
6 ''	13/8	,60	.56	.50	1.10
6 ''	1 1/2	.68	.60	.52	1.20
6 ''	1 5/8	.76	. 68	.60	1.50
6 ''	1 3/4	.84	.76	. 68	2.00
6 ''	17/8	.96	.84	.76	2.40
ß "	2	1.04	.92	.80	2.80
3 "	21/4	1.50	1.30	1.12	
3 ''	21/2	2.00	1.70	1.40	
3 "	23/4	2.60	2.30	2.00	
3 "	3	3.50	3.00	2.50	

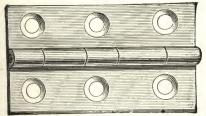


"STAR BRAND" Wrought Brass Butt Hinges.

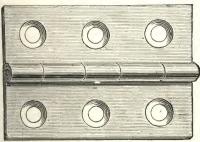




2 INCH NARROW.



2 INCH MIDDLE.



2 INCH BROAD.

Our Stock comprises all sizes of Narrow. Middle, Broad and Desk Butts and we are prepared to furnish at short notice a full line of Special Hinges, including Loose Pin, Cigar Box and Fancy Patterns.

Roofing Material.

Weights & Measures.

graphic Code.

"STAR BRAND"



WROUGHT BRASS BUTT HINGES.



SHUTTER HINGES.

Length and Width when Open.

		Doz. Pair.				Doz. Pair.
11/4 x 13/4	inche	s\$0.84	1 3/4	x 21/4	inche	s\$1.80
1 1/4 x 2		1.10	1 3/4	x 2 1/2	4.4	2.00
11/4 x 21/4	4.6	1.30	2	x 11/4	4.6	1 50
1 2 x 1 1/2	4.6	1.10	2	$x 1 \frac{1}{2}$	4.4	1.60
$1\frac{1}{2} \times 2$	6.6	$\dots 1.40$	2	x 15/8	4.4	1.70
1½ x 2¼	4.6	1.50	2	$\times 13/4$	6.6	1.90
$1\frac{1}{2} \times 2\frac{1}{2}$	4.6	1.60	2	$\times 2$	6 6	2.00
$1\frac{1}{2} \times 3$	4.6	1.80	2	$\times 2\frac{1}{2}$	6.6	2.50
13/4 x 13/4	6.6	1.50	2	x 3	4.6	3.00

PARLIAMENT HINGES.

13/4 x 21/2	4.4	2.70	6.6
$1\frac{3}{4} \times 2\frac{1}{2}$ $1\frac{3}{4} \times 2$	4.6	2.40	4.4

ACORN AND BALL TIPPED BUTTS.

WITH LOOSE OR FAST PINS.

PRICES ARE PER DOZEN PAIR.

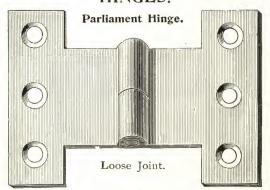
Length and Width when Open.

Size.	Dipped.	Polished.	Polished, with Screws.
1½ x 1½ in. 1½ x 1¼ "	\$1.00 1.20	\$1.80 2.10	\$2.00 2.40
134 x 114 "	1.40	2.50	2.80
2 1/8 1/2 "	$\frac{1.80}{2.00}$	3,30 3,80	3.60 4.00
2½ x 1 5% " 2¾ x 1¾ "	2.60 3.50	4.30 5.20	4.50 5.50
3 x 2 "	5.00	6.60	7.00

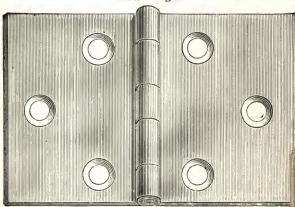


"STAR BRAND" WROUGHT BRASS BUTT HINGES.





Desk Hinge.



We carry a full line of Brass Butt Hinges in stock for prompt shipment.

Roofing Material.

Weights & Measures

GENUINE BLAKE'S BELT STUDS.

They are the Strongest, Most Durable, and Cheapest Belt Fasteners on the Market for

Rubber and Leather Belts.

Beware of fraudulent and inferior imitations. None Genuine without this label and trade mark on



Illustrations showing full size.

Packed in Neat Paper Boxes containing 100 each.

A complete assortment of above carried in Stock, ready for immediate shipment.

DISCOUNT QUOTED ON APPLICATION.

EMPIRE BELT STUDS.

To meet competition, we offer a cheap Belt Fastener, under the above trade name. They are made of fine brass, approximating the shape of the improved Blake's Belt Studs. They are not strengthened, however, by the patent swaging process, nor are they hnished in the same way.

No.	3,	LIST PRICE Per 100.
44	2,	1,25
" "	1,	1.65
£ 6	0,	2.00
4.6	00,	2,50

Illustrations showing full sizes,
Packed in Neat Paper Boxes containing 100 each.

These Studs are made in sizes only from No. 00 to No. 3 incl.

AWL AND PLYERS COMBINED.



The Awl at one end of this tool is to spread the slit, and plyers at the other end are convenient for inserting the stud.

Large Cutters,	for Rubber	Belts	 	each, \$1.25
Small "	" Leather	r ''	 	. " .90
Awls, to spread				
Awl and Plyers	Combined		 	. " .40

DISCOUNT QUOTED ON APPLICATION.





"STAR BRAND"

BRASS CHECKS.



No. 1. Brass.

124 to the lb.

80c. per lb.

No. 4. Brass.







128 to the 1b. 80c. per lb.



86 to the lb. 80c. per lb.



124 to the lb. 90c. per 1b.



128 to the 1b. 90c, per lb No. 10. Brass.



84 to the lb. 80c. per lb.

No. 6. Brass.



142 to the lb. 80c. per lb.



106 to the lb. 90c. per lb.



88 to the lb. 90c. per lb.

The Number to Pound as Given is Approximate. DISCOUNT QUOTED ON APPLICATION.



"STAR BRAND" BRASS CHECKS.



Brass.

Brass. No. 12. With or without hole.

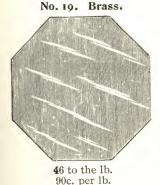


No. 22.

60 to the 1b. 75c. per 1b.

112 to the lb. 90c. per 1b.

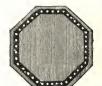






138 to the 1b. 90c. per 1b.

No. 25. Brass.



132 to the 1b. 90c. per 1b.

The Number Given to the Pound is Approximate.

DISCOUNT QUOTED ON APPLICATION.





"STAR BRAND"

Brass Baggage Checks.

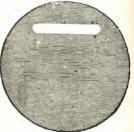


No. 16. Brass.



63 to the lb. 90c, per lb.

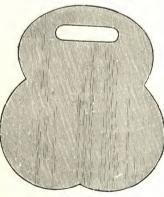
No. 3. Brass



62 to the lb. 75c. per lb.

No. 18. Brass.
Also blank or with round hole.

No 31. Brass. Blank or with round hole.



35 to the lb. 85c, per lb.

Number to the pound as given is approximate.



92 to the lb. 80c. per lb.

No. 26. Brass.

Plain and with round hole.



94 to the lb. 95c. per lb.

DISCOUNT QUOTED ON APPLICATION.



"STAR BRAND" Brass Baggage and Factory Checks.



Brass.

Brass. No. 39.



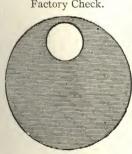
No. 49.



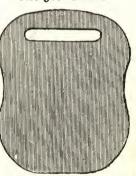
40 to the 1b. 80c. per 1b.

58 to the lb. 80c. per lb.

No. 51. Brass. Factory Check.



No. 50. Brass.



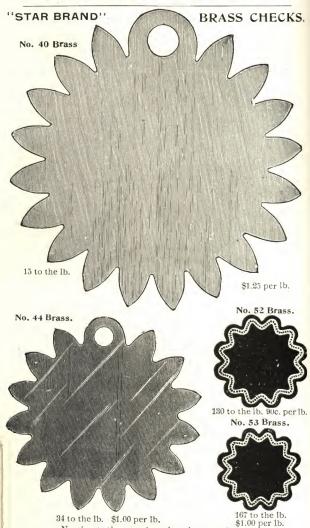
64 to the lb. 75c. per lb. 49 to the lb. 80c. per lb.

Number to the Pound as Given is Approximate. DISCOUNT QUOTED ON APPLICATION.

Roofing Material.

Weights & Measures.

188 U. T. HUNGERFORD BRASS AND COPPER CO.



Number to the pound as given is approximate.

Discount Quoted on Application.



"STAR BRAND"

GERMAN SILVER CHECKS



No. 28. No. 48. No. 29. Germ. Silver Germ. Silver Germ. Silver Germ. Silver









Three-line Eagle Four-line Eagle 116 to the lb.

119 to the lb. \$1.25 per 1b. \$1.25 per 1b.

Umbrella Plate 272 to the lb. \$1.50 per 1b.

No. 33.

Ger. Silv.

Fancy Shield 200 to the lb. \$1.50 per 1b.

No. 35. Germ. Silver



No. 54.



Plain Keystone 100 to the lb. \$1.25 per 1b.



Umbrella Plate 294 to the lb. \$1.50 per 1b.



345 to the 1b. \$1.50 per lb.

THE NUMBER TO POUND AS GIVEN IS APPROXIMATE. DISCOUNT QUOTED ON APPLICATION.

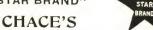
Roofing Material. Weights &

Measures.

graphic



"STAR BRAND"



TRADE

MACHINE OILERS.

SPUN ZINC OILERS.

WITH TIN BOTTOM.	WITH BRASS BOTTOM.
No. 00\$1.00 per doz.	No. 0\$1.50 per doz.
" 01.25 "	" 1 1.75 "
" 1 1.50 "	" 2 , 2.50 "
· · 2 2.00 · ·	" 3 3.00 "
" 3 2.25 "	" 4 3.50 "
" 4 2.75 "	· · 5 4.50 · ·
" 5 3.50 "	" 6 5.50 "
" 6 450 "	0 0.00

0 4.50	
BRASS OILERS.	COPPER OILERS.
No. 0\$2.25 per doz.	No. 0\$2.50 per doz.
" 1 2.50 "	" 1 2.75 "
· · 2 3.50 · ·	" 2 3.75 "
" 3 4.00 "	· · 3 4.25 · · ·
" 4 4.75 "	" 4 5.00 "
· · 5 6.00	" 5 6.25 "
" 6 7.50 "	" 6 8.00 "

STAMPED TIN OILERS.

WITH TIN BOTTOM.	WITH BRASS BOTTOM.
No. 0 \$1.25 per doz.	No. 1\$1.75 per doz.
" 1 1.50 "	" 2 ^{2.50} "
" 2 2.00 "	'' 3 3.00 ''
" 3. 2.25 "	

SEWING MACHINE OILERS.

Tin. Zinc or Japanned, in bulk......\$6.00 per gross
If packed in boxes of ½ dozen each, add \$1.00 per
gross to list.

MOWING MACHINE OILERS.

Round, in bulk	\$10.00 per gross
Oval, "	12.00
If packed in	boxes of ½ dozen each, add \$1.00 per

gross to list.

DISCOUNTS QUOTED ON APPLICATION.



"STAR BRAND"



CHACE'S MACHINE OILERS.

Spun Zinc Oilers, with Drip Cup.

WITH TIN BOTTOM	. With Brass Bottom.
No. 0\$2.00 per o	doz. No. 0\$2.25 per doz.
" 1 2.25 "	
" 2 3.00 "	~ 9.00
" 3 3.25	" 3 4.00 "
" 4 3.75 '	" 4 4.50 "
., 5 4.50	" 5 5.50 "
" 6 5.50 °	

Brass Oilers.

Copper Oilers.

WITH DRIP CUP.

No.	0\$3.00 per	doz. No.	0\$3.25	per doz.
6.6	13.50		1 3.75	4.4
L 6	24.50	6 4	$2, \dots, 4.75$	66
6.6	35.25	66 64	$3 \dots 5.50$	4 +
	46.00		46.25	6.6
. 6	57.00	66 66	57.25	6 6
6.6	6 8.50		68.75	4.4

Automatic Oilers.

No.	1, Zi	ne At	itomatic	Oiler	s.				\$3.50	per doz
6.4	2,		6.6						4.00	4.6
6.6	3,	4 4	6 C	4.4					4.50	4.6
4.4	1, B	rass	4.4	4.6					5.50	6.6
4.4	~,		4.	6 6					6.50	4.4
4.4	3,		4 4	4.6					7.50	4.6
- 4	1, C	opper	6.6	4.6					5.75	4.6
6.6	2,	4.6	6.6	6.6					6.75	4.6
+ 4	9.	4.4	4.4	4.4					7 75	6.6

Can Screws.

Zinc, \$4.004.506.008.0012.0016.0020.00 per gro. Brass, 4.505.507.5010.0013.0017.0021.00

DISCOUNTS QUOTED ON APPLICATION.





"STAR BRAND" OIL-CAN FILLERS,



FOR ENGINEERS.

	Per Dozen.
Pint, Brass or Copper	\$12.00
	18.00
Quart, " "	21.00
Pint, " with 1	ong spouts 15.00
Quart, "	" 34 .00
1 Gill, Zinc	3.00
½ Pint, "	3.50
	4.00
11/2 " "	5.00
1 Quart "	6.00
	The state of the s

ENGINEERS' DRIP OILERS.

	Per Dozen.
1 Pint	\$3.75
$1\frac{1}{2}$ "	4.25
1 Quart	4.50

ENGINEERS' SETS.

COMPLETE WITH TRAYS.

	SMALL, LARGE,
Copper	.\$ 7.00 \$ 8.00 per set.
Brass	. 6.00 7.00 "
Nickel Plated	. 10.00 12.00 "
Small set contains four pieces	s; large set, five pieces.
Trays, 11 x 13 1/2 a	and 13×16 .

DISCOUNTS QUOTED ON APPLICATION.



Carried in Stock, ready for immediate shipment, a full line of:

Chace's Machine Oilers.



IN ZINC, BRASS AND COPPER.

ALL SIZES.

Zinc and Brass Can Screws.

ALL REGULAR SIZES.



WE ALSO FURNISH FROM MILL PROMPTLY,

Brass Engineer Oilers, Fillers, Mowing Machine Oilers, Zinc Sewing Machine Oilers, Etc.





"STAR BRAND"

Brass and Iron Chain,



Price per Box Containing 12 Yards.

Jack Chain.

	S	INGLE.	Double.							
No.	Iron.	Brass.	Silvered.	Iron.	Brass.	Silver'd				
5	\$1.60	\$10.00	\$12.50							
6	1.30	8.00								
7	1.05	6.35								
8	.95	5.25			,					
9	.90	4.25								
10	.80	3.50		\$0.95	\$4.25	\$5.31				
11	. 55	2.55	3.19	.75	3.45	4.31				
12	.44	2.05	2.56	.65	3.00	3.75				
13	.42	1.70	2.121/2	.60	2.15	2.69				
14	.40	1.35	1.69	.55	1.90	2.371/2				
15	. 35	1.00	1.25	.43	1.50	1.871/2				
16	.30	.86	1.071/2	.38	1.20	1.50^{2}				
17	.30	.82	1.02 1/2	.34	1.00	1.25				
18	.28	.60	.75	.33	.75	.94				
19	.27	. 54	.67 1/2	.33	.65	.81				
20	.26	.50	.62 1/2	.33	.62	.77 1/2				
21	.25	.45	.56	.33	.60	.75				
22	. 25	.40	.50	.33	.60	.75				
23	.25	.40	.50	.33	.60	.75				
24	.25	.40	.50	.33	.60	.75				

Ladder Chain.

No.	Iron.	Brass.	
17 18 19	\$0.60 .50 .45	\$1.20 1.10 .90	

DISCOUNT QUOTED ON APPLICATION.

Carried in Stock, ready for immediate shipment:



"STAR BEAND"

Single Brass and Iron Jack Chain.



No. 24.



No. 19.

No. 15.



No. 13.



No. 10.



PACKED IN BOXES CONTAINING 12 YARDS.

STOCK SIZES No. 6 TO 24 INCLUSIVE.

NICKEL PLATED OR SILVERED CHAIN FURNISHED FROM
MILL PROMPTLY.



196 U. T. HUNGERFORD BRASS AND COPPER CO.

Carried in Stock, ready for immediate shipment:



"STAR BRAND"

Double Brass and Iron Jack Chain.



No. 23.

CORRECTIONS

No. 18.



No. 14.



No. 12.



No. 10.



PACKED IN BOXES CONTAINING 12 YARDS.

STOCK SIZES NOS. 10 TO 24 INCLUSIVE.

NICKEL PLATED OR SILVERED CHAIN FURNISHED FROM MILL PROMPTLY.

Carried in Stock, ready for immediate shipment:



POLISHED STEEL CHAIN.



No. 1509.

DIDIDIDIDIDIDIDI

No. 1519.

THE SEPTEMBER OF THE

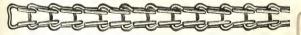
Carried in stock packed in boxes containing 110 yards.

Cuts represent exact sizes.

The above also carried in stock Nickel Plated.

"STAR BRAND"

BRASS LADDER CHAIN.



No. 18. Ladder.

SIZES 17, 18 & 19 CARRIED IN STOCK IN BOXES
OF ONE DOZEN YARDS.

Rosfing Material.

PRICE LIST OF



"STAR BRAND"





REGULAR AND PLUMBERS' LINK.

Price p	oer Box 12 Ya	containing ards.	Price per 100 Feet, on reels of 500 or 1,000 Feet.									
No	$000 \\ 00 \\ 0 \\ 1 \\ 2 \\ 3$	\$1.15 1.25 1.50 1.85 2.30 3.15	No	000 00 0 1 2 3	\$3.30 3.60 4.30 5.20 6.40 9.00							
No. 000 yards. No. 2 t	to 1, ad	s for Nickel Silvering. Id per doznet 5c. d per doznet 10c.	No. 000 feet No. 2	to 1, a	s for Nickel Silvering. dd per 100net 10c, d per 100net 20c,							

In ordering, please state if Plumbers or Regular Safety Chain is wanted.



BRASS SNAPS, or SPLIT LINKS.

Small,	No.	00				 					\$1.50	per	gross.
		1											

For Nickel Plating or Silvering, add per gross, net 10c.

DISCOUNTS ON BRASS CHAIN AND SNAPS QUOTED ON APPLICATION.

Carried in Stock, ready for immediate shipment:



"STAR BRAND"

Brass and Nickel Plated Safety Chains.



Plumbers' Link.—In Packages of 12 Yards.

No. 00, 0, 1, and 2.



This cut represents exact size and shape of link of above numbers—the different sizes varying only in thickness of metal, No. 00 being the thinnest, No. 2 the thickest.

Special Navy Link.



Brass and Nickel Plated Safety Chain.

Regular Link.-In Packages of 12 Yards.

No. 1.



No. 2.



All sizes from No. 000 to No. 3 in stock, both Brass and Nickel Plated.

Roofing Material.

> Weights & Measures.

Telegraphic Code. Carried in Stock, ready for immediate shipment:



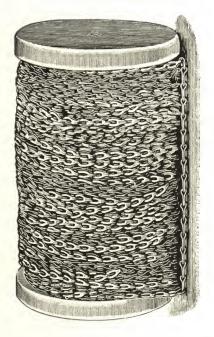
"STAR BRAND"

Brass and Nickel Plated Safety Chain.



Plumbers' Link.—On Reels of 500 Feet of a Size.

For Price List see page 198.



We carry a stock of Nos. 00 and 0, both **Brass** and **Nickel Plated** Plumbers' Link, and can furnish other sizes, either Regular or Plumbers' Link, on any size reel, promptly from Mill.



STAR BRAND"

Brass Basin, Bath and



Wash Tray Chains and Snaps.

Basin, 16 inches long, including Snaps. Bath, 26 inches long, including Snaps. Wash Tray, 20 inches long, including Snaps.

Regular and Plumbers' Safety Chain, same List.

PRICE PER BOX CONTAINING 12 LENGTHS.

No. 00	Basin	\$0.95
" 0	46	1.00
" 1	44	1.20
" 0	Bath	1.35
" 1	44	1.60
" 2	66	1.80
" 0	Wash Tray	1.25
" 1	44 44	1.40
2		1.55

DISCOUNT ON BRASS CHAIN QUOTED ON APPLICATION.

Net Advances for Nickel Plating or Silvering.

Basin, all Nos., add	per box	net	5c.
Bath, "	"		6c.
Wash Tray,	6 6		7c.

In ordering, please state if Plumbers' or regular Safety Chain is wanted.



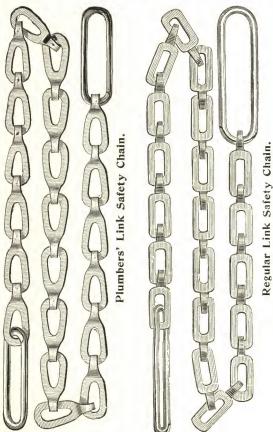
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Carried in Stock, ready for immediate shipment a full line of



"STAR BRAND"
Basin, Bath,
and Wash Tray
Chains and Snaps.

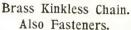




In ordering Specify which Kind, whether Plumbers' or Regular Link, is Wanted.

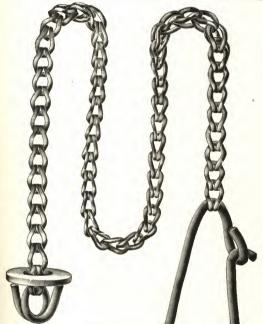


"STAR BRAND" Solid Link





For Window Sash, Ventilator and Furnace Chain.



CUT REPRESENTS EXACT SIZE OF LINK.

This chain is especially adapted for running over Pulleys, being constructed in such a manner as to run smoothly without Friction or Kinking, is very durable and can be used for any purpose where strength and non-corrosive qualities are essential.

Possesses great tensile strength, and will stand a working weight of about 75 pounds.

Carried in Stock on Reels from 200 to 500 Feet.
PRICES QUOTED ON APPLICATION.





"STAR BRAND"
BRASS 8 HOOKS.





Extra Heavy - per Gross.

No. ½ 1½ 2½ 3½ Brass ...\$3.25 \$2.75 \$2.00 \$1.50

Regular - per Gross.

No. 1 2 3 4 5 6 7 Brass \$2.25 \$1.80 \$1.50 \$1.30 \$1.10 \$0.90 \$0.85

Net Advances for Nickel Plating or Silvering.

No. ½ to ½, add per gross, net, 12c.

We carry a full assortment of the above in both
Brass and Nickel Plated.
Discount Quoted on Application.

BRASS GROMMETS.

Conical Point, Rolled Rim.

No. 2 3 4 5 6 \$2.00 \$2.70 \$3.60 \$4.75 \$5.50 per gross.

SHEET BRASS WASHER AND TEETH.

No. 0 1 2 3 4 5 \$0.70 \$1.80 \$2.00 \$2.70 \$3.00 \$4.00 per gross.

EYELET.

3/8 in. 40c. per gross.

Discount Quoted on Application.

Carried in Stock, ready for immediate shipment, a full line of





Seamless Brass Chisel Handle Ferrules.



No.	Approximate Outside Diameter	Price per Gross
00	1 in.	\$1.56
0	156	1.30
1 2 3 4 5 6 7 8 9	7/8	1.10
2	$\frac{1}{1}\frac{3}{6}$.88
3	3/4	.75
4	$\frac{1}{1} \cdot \frac{1}{6}$.70
5	5/8	. 65
6	$\frac{9}{16}$.55
7	1/2	.45
8	7	. 45
	3/8	.45
0	1 6	.45
1	9	. 45

Sample nests of above furnished on application.

Always order by Nos, stamped on samples. Sizes given in fractions of an inch are only approximate.

Special Ferrules made to order.

DISCOUNT QUOTED ON APPLICATION.

Seamless Brass Chisel Handle Ferrules.

EXTRA LARGE SIZES

No.	Approximate Outside Diameter	
8011	1½ in.	ses
8010	1 34	Special Prices
8264	$1\frac{5}{16}$	11
7858	1 1/4	SCi
7857	$1\frac{3}{16}$	Spe
7498	1 1/8	-
6926	$1\frac{1}{16}$	

Brass tinned and nickel-plated Ferrules.
Also special sizes made to order.

Roofing Material.

Weights & Measures.





"STAR BRAND" Brass Curtain Rings.

No Inch Per Great Gross No Inch Per Great Gross



No.	Inch	Per Great Gross	No.	Inen	Per Great G	ross
20 20	1/8 3 6 1/4 5 6 6 3/8 8 7 1 6 2 1 6 5/8 8 1/2 9 6 1 7/8 1/2 9 6	\$1.50 1.55	16 16	5/8 3/4 7/8 1	\$3.50	
	16	1.60	16	74	4.50	
20	1/4			1/8	5.50	
20	16	1.75	16	1	7.00	
19	3/8	1.88	14	/2	4.00	
18	3/8	2.12	14	16	4.50	
18	16	2.20	14	3/4	5.50	
18	1/2	2.40	14	1/2 9 1 6 3/4 7/8 1	7.00	
18	16	2.75	14		8.00	
18	5/8	3.00	13	3/4 5/8 3/4 7/8	6.00	
18	3/4	3.50	12	5/8	6.00	
18	7/8	4.50	12	3/4	7.00	
16	1/2	3.00	12	7/8	8.00	
16	1 6	3.25	12	1	10.00	
10 10 8 8	7/8 1 ½ 3/4 1 ½ 1 ½ 1 ¼ 1 ¼				6.6	1.00 1.40 1.00 1.40
8	1 1/					1.60
3	11/					2.00
3	1 1/2					3.00
3/6	13/				Per dozen	.50
3/6	24				44	.75
3 16 3 16 3/8 3/8 3/8 3/8	1 ½ 1 ¾ 2 ¼ 2 ½ 2 ½				6.6	.88
3/6	2.1/					1.00
78	N /2					1.00

All sizes from 1/8 in. No. 20 to 1 in. No. 12. Packed 1 Great Gross in a Box.

Al! sizes from 7% in. No. 10. to $2\frac{1}{2}$ in. No. 3%. Packed 1 Gross in a box.

DISCOUNT QUOTED ON APPLICATION.

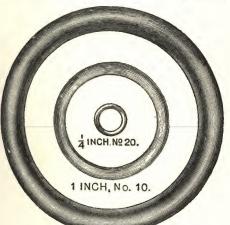


"STAR BRAND" BRASS CURTAIN RINGS.









BINCH, 2 INCH.



We carry a full line of above in stock at factory and can make prompt shipment.



Roofing Material.

Weights &

graphic Cole.



"STAR BRAND" BRASS SCREW RINGS.



EXTRA GIMLET POINTED.



3 INCH NO 18. 3 INCH. NO 18. 3 INCH. NO 18.

No	18 3%	inch	1	Gross,	\$0,45
	18, 7	44	****		.60
	18, 16				.75
			************	66	1.00
				4.6	.88
	16, 5/8	4.6		6.6	1.12
	16, 3/		******************************	6.6	1.40
44	16, 7/8		******************	66	1.60
6.6				4.6	1.40
		6.6	***************************************	44	2.00
	14, 1		**********	4.4	2.50
6.6			*********	66	2.00
6.6	12, 11/			4.6	3.00
	10, 1			6.6	2,75

Curtain and Screw Rings Silvered, Nickeled or Japanned at a slight advance.

Packed 1 Gross in a Box.

DISCOUNT QUOTED ON APPLICATION.

We are prepared to furnish promptly from mill a full line of Brass Screw Rings and Screw Hooks.



"STAR BRAND"

Metalene Upholsterer's Nails.



Flat or Oval Head.

OVAL HEAD.







No. 250.

No. 240.

Metalene Upholsterers' Nails are designed to imitate leather and are far superior to the genuine leather-headed nails principally because they are almost indestructible. The colored coating to match the various colors of leather is applied by a new process, and the finished nail has a smooth, clean, delicate, leather-like finish. The color is permanent and very true to the original leather.

1466

Fancy Head Nails.





Numeral Nails.

PRICES QUOTED ON APPLICATION.



Roofing Material.

Weights & Measures.

graphic Code.



Price List of 'STAR BRAND'



GILT UPHOLSTERY NAILS.

Packed 1000 Nails in a box.

			No. 4	1	42	43	
Gilt			\$1	.00	.70	.60 p	er 1000
Nickel	Plated.		1	.20	.85	.75	4.6
	No. 3	4	5	6	9	10	
Gilt,	\$1.50	1.30	1.00	.80	1.35	1.15 p	er 1000.
Nickel Plated,	1.70	1,45	1.15	.95	1.60	1.40	"
I	No. 11	12	19	243	244	245	
Gilt,	\$.90	.65	.65	1.80	1.50	1.30 p	er 1000.
Nickel Plated,	1 (12)	.85	.85	2.00	1.70	1.50	4.6

We furnish all the above sizes with spikes, as follows:

Long (¾ in.) Medium (% in.) Short (½ in.)

When no length is specified, will send Medium % in., which is regular.

For Silvered Nails, take the list of nickel plated. Special sizes made to order.

ALL SIZES CARRIED IN STOCK.

DISCOUNT QUOTED ON APPLICATION.



Price List of "STAR BRAND" GILT UPHOLSTERY NAILS



Put up in Cartons containing 1000 Nails, packed in boxes of 50 and 100 of a size.

(SEE I	LLUSTI	RATION	1)		
`	No.	41	4	12	43
100 in a box	8	1 15	.8	35	.75 per 1000
50 " "				95	.85
No. 3	4	5	6	9	10
100 in a box\$1.65	1.45	1.15	.95	1.50	1.30 per 1000
50 " " 1.75	1.55	1.25	1.05	1.60	1.40 "
No. 11	12	19	243	244	245
100 in a box \$1.05	.80	.80	2.00	1.70	1.50 per 1000
50 " " 1.15	.90	.90	2.10	1.80	1.60
DISCOUNT QUO	OTED O	N AP	PLICAT	TON.	





Full Size Cut of Box Containing 100 No. 42 Nails. Especially Adapted for Retail Trade.

Packed in Cartons of 10 folding boxes of 100 Nails each, or 20 folding boxes of 50 Nails each, also in boxes of 1000 each.

ANY OF THE ABOVE SIZES SHIPPED PROMPTLY. Can also furnish Fancy Gilt Nails, in various styles. and Large Head Brass Nails for Calendar Rolls, etc. Roofing Material. Weights & Measures.

graphic



"STAR BRAND" Corrugated

Corrugated Copper Gaskets.



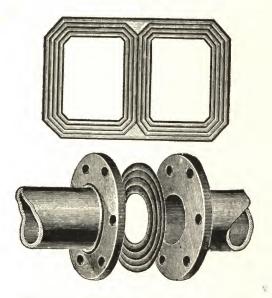
HIS metallic gasket may be used in place of rubber or other destructible materials in general use for packing. It consists of thin sheet copper, stamped with concentric corrugations. Three to six corrugations are all that are necessary, so that the space within the bolt holes determines the width of the gasket. In cases where the flanges are thin, and for this reason are liable to bend when the bolts are tightened, it is advisable to extend the copper gasket to the full width of the flange. This will of course require the cutting of both holes in the gasket. Connections made with these gaskets will not blow out after continued use, for each corrugation makes the entire circle of the flange, and so long as the contact is kept complete by compression, the joint cannot leak. This gasket never blows out like rubber. It may be put in place while steam is leaking through valve. Answers well on pipes in which steam is alternately on and off, for it is not impaired by the repeated expansion and contraction.



"STAR BRAND"

CORRUGATED COPPER GASKETS.





For Lip Unions, Flange Unions, Plain and Ball Joints, Connecting Steam Air Gas or Water Pipes. Also for Cylinder Heads, Steam Chests, etc.

We furnish to order promptly Plain and Corrugated Copper Gaskets of any desired size.

PRICES QUOTED ON RECEIPT OF SPECIFICATIONS.

Roofing Material.

Weights & Measures.

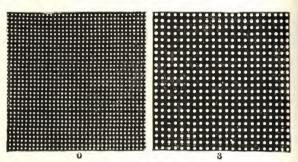
> graphic Code.



BRAND

"STAR BRAND" Perforated Brass and Copper.





Regular sizes in Brass carried in stock, 14 in. wide No. 26 B. & S. Gauge.

Can furnish Perforated Brass and Copper in any size sheets or number perforation.

Rules for Ordering Perforated Sheet Metal.

The following information is necessary, in order to enable us to execute orders promptly:

Specify exact dimensions of the sheets required,

in inches.

Specify what kind of material is required, if

copper or brass.

Specify the thickness required, and whether Stubs' (English) wire gauge, or Brown & Sharp's (American) wire gauge.

Specify if blank margin or selvage edge is required, of what width and on which sides; state all particulars as to size and location of bolt holes in the

margin; send sketch if possible.

Specify whether holes are to be round, square or oblong; give approximately the distance from centres; state whether holes are to be staggered or in line both ways; and specify, in the case of oval holes, the direction in which the holes are to run.

State for what purpose the plate will be required and the kind of service on which it is to be used.

Carried in Stock, ready for immediate shipment:



"STAR BRAND" Brass and Copper Wire Cloth.





The Mesh in Wire Cloth is the distance from the centre to the centre of the Wire. No length less than 100 lineal feet shall be understood to be a

Ko:	١.												
No.	2	Mesh,	Brass	Wire	Cloth,	from	No.	16	Wire.	\$0	50	ner	sq. ft.
* *	3		1.6	4.4	6.6	6.5	6.6	17	44	Ψ	50	Li	14
6.6	4	4.4	4.6	h 6	4.6	6.6	1.6	18	6.6		50	6.6	6.6
4.4	5	6.6	5.5	3.4	6.4	k h	4.6	19	6.6		50	6.6	6.4
6.4	6	5.5	6.6	4.6	h =		4.4	20	6.6		a0		6.6
6.6	8	4.5	1.5	1.6	4 4	1.6	2.3	22	4.4		50	4.6	
6.6	10	8.6	* *	6.6	6 h	. 6		23	6.6		50		
6.6	12	5.4	h +	9.6	* *	4.4	4.5	24	6.6		50		11
4.6	14	4.5	* *		4.5		1.5	25			50	4.5	
	16	6.5	6.5			1.4		26	٠,		50	4.5	
1.6	18	6.	4.6	5.6	1.5	6.5	4.6	27	1.7		50		
1.6	20	6.6	1.4	- 4	1.6	* 1		28	6.6		50	4.5	4.6
6.6	22	h +	6.5	1.5	1.5		1.6	29	4.5		50		
1.6	24	4.4	4.1		4.4		4.5	30	6.6		50		
h 6	30	h e	1.5	6.6			1.0	31	b 4		55		6.5
6.6	35	5.5	1.6	4.6	1.5	1.5	1.6	32	6.6		55	4.	
1.6	40	4.4	6.6	+ 6	+ 5	4.4	1.6	33	4 -		60		6.6
5.6	45	6.5	6.6	4 h	6.6	* *	6.6	34	h to		65		
6.9	50	t s	4.4	1.4	6.4	- 4		35			65	9.6	6.5
b b	60	6.6	6.1	10 to	4.4	+ 4		36			70	14	
6.6	70	1.5	6.6			4.4	1.5	37			80		4.
6.6	80	6.6	5 h	1.6	4.6	. 4	1.6	38	1.6	-1	00	1.	
+ 6	90	4.4	4.5	4.6	5.5		* 1	39		1	25		
6.6	100	1.1	4.6	1.6			- 1	40		-	45		4.5
+ 6	110	4.4		1.6	* 1			40	1.6	1	50		
6.6	120	6.6			5.4	1.4	4.6	40		1		1.	
1.6	130			4.4			14	40		1	75	1.0	
	100							40		2	25		

We have in stock all regular or standard Meshes from 2 to 130 Mesh, in widths of 36 and 48 inches. Can furnish from Mill promptly, any special width, Mesh or gauge of wire if required, in reasonable quantities.

Regular stock widths, 36 and 48 in. Discount quoted on application. Copper Wire Cloth. - Prices quoted on receipt of specifications, Roofing Material.

Weights & Measures.



Carried in Stock, ready for immediate shipment:



"STAR BRAND"

Brass Strainer Cloth.



For Milk Strainers and Other Purposes.

In rolls of five feet long by 12 in. wide.

Nos. 40, 50, 60, 70, 80, 90 and 100.

Each size packed in case of 500 feet.

Prices quoted on application.

We also carry a full line of Brass and Copper Wire Cloth, all regular sizes. See price list, page 215.

Special widths and mesh made to order.

We also make a specialty of

Brass and Bronze Mosquito Netting

ALL REGULAR WIDTHS, GAUGES AND MESH.

Prices quoted on receipt of specification.

"STAR BRAND" Brass Extinguishers.



Per Gross
Brass Extinguisher, no
Chain\$0.45
Brass Extinguisher,
Chained, 1 Tube90
Brass Extinguisher, 2
Tubes 1.35

We carry above in stock packed in boxes of 1 gross and in cases containing 100 gross.

These Extinguishers are made of heavy Brass, full size, well finished and have long chains.

MEMORANDA

Roefing Material.

Weights & Measures.

> felegraphic Code.

U. T. HUNGERFORD BRASS AND COPPER CO.

MEMORANDA



"STAR BRAND"



BOLTS, NUTS and WASHERS

also

LAG, SET, and CAP SCREWS, STUDS AND PINS,

Made from

Naval Brass, Muntz Metal,

Tobin Bronze, Delta Metal

or Pure Copper,

any size or thickness.

See illustrations on following pages.

We have special facilities for furnishing above goods and will be glad to quote prices on receipt of specifications showing requirements.

Roofing Material.

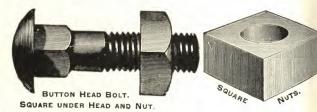
Weights & Measures.





"STAR BRAND" BOLTS AND NUTS







HEXAGON NUT.



SQUARE UNDER HEAD AND NUT.



MACHINE BOLT AND NUT.

Above illustrations show only a few of the styles we are prepared to make, as we can furnish any size or style made in

Muntz Metal, Tobin Bronze, Naval Brass, Delta Metal or Copper.

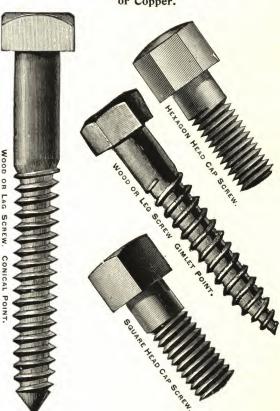
MARK. CAP & LAG SCREWS TRADE BRAND

"STAR BRAND"

Any size or style made in

Muntz Metal, Naval Brass, Tobin Bronze, Delta Metal, or Copper.





Hanger Screws, Studs and Special Screws of almost every description made to order with reasonable promptness,

Roofing Material.

Weights & Measures.

graphic Code.



"STAR BRAND"

Iron, Brass and Bronze Machine Screws.





FILLISTER HEAD



FLAT HEAD



ROUND HEAD

We also have in stock-a full line of Brass and Iron Wood Screws. Round and Flat Head.

Special Screws of various sizes and kinds made to order with reasonable promptness.

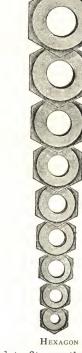


"STAR BRAND"

Iron, Brass and Bronze Machine Screw Nuts.







SOUARE

All sizes, plain or tapped to fit any thread.
We are also prepared to furnish other sizes and kinds of nuts, either cast, punched or turned from the solid bar made of Brass, Copper, Bronze or Special Compositions.

Roofing Material.

> Weights & Measures.

graphic Code.

Carried in Stock, ready for immediate shipment.



"STAR BRAND"

Brass and Zinc Stair Plates.



For Hotels, Public Buildings, Apartment Houses, Steamers, Etc.

SHELL PATTERN.



MADE UP TO 12 INCHES WIDE.

DIAMOND PATTERN



MADE UP TO 36 INCHES WIDE.

We carry the following sizes, both Brass and Zinc, in stock—Diamond and Shell Patterns:

5 in. x 18 in. 5 in. x 20 in. 6 in. x 18 in. 6 in. x 20 in.

Average Weight, 1 lb. to running foot, 6 in. on face.

Special Sizes made to Order Promptly.

Prices quoted on application.

Carried in Stock, ready for immediate shipment.



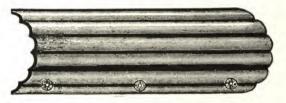
"STAR BRAND"

Brass and Zinc Nosings





No. 1.—Made in 3/4 in., 11/4 in., 11/2 in. and 2 in.



No. 4.—Made in 11/4 in. wide only.



No. 3.—Made 1¼ in., 1½ in. and 2 in.
PLAIN, FLUTED, AND DIAMOND PATTERN.
All regular lengths by 1¼ and 1½ in. wide in stock.
Special sizes made to order promptly.
Prices quoted on receipt of specifications.

Roofing Material.

Weights & Measures.

graphic Code.

THE

"DIRIGO"

SOLDERLESS COPPER FLOAT

Reg. U. S. Pat. Off.



Cross Section of Joint Showing Construction. Cross Section of Nipple Showing Method of Attaching to Shell.

PRICES QUOTED ON APPLICATION.

The "Dirigo" Solderless Float Ball has been designed to overcome the objection to Float Balls made with soldered seams. In many localities the water is of such a nature that solder will disintegrate when exposed to its action and float balls made with soldered seams quickly come apart. The "Dirigo" is practically indestructible and guaranteed absolutely air tight. All joints and seams are purely mechanical and every ball is carefully and scientifically tested before it is packed for shipment. The "Dirigo" Ball is made entirely from pure copper, measures five inches diameter, and while made as light as possible to secure the desired buoyancy, the form of construction is such as to secure sufficient rigidity to prevent the ball collapsing under any conditions that surround its use in closet tanks. The nipple is made from wrought brass as non-corrosive and durable as the copper in the ball, threaded for standard 3 rod.

The "Dirigo" can be attached to any type of ball cock by simply screwing on the Float Ball rod and is ready for immediate use everywhere and anywhere.

As a substitute for a Float Ball with soldered seams it will prevent possibility of any disarrangement of the flushing device through the failure of the Float Ball to perform its proper function.

The "Dirigo" Solderless Float Ball can be procured from any dealer in Plumbers' Supplies or Plumber in the United States or Canada. If your dealer does not handle it write to us.

We carry the above in our New York warehouse ready for immediate shipment on receipt of orders.

PRICE QUOTED ON APPLICATION.

Roofing Material.

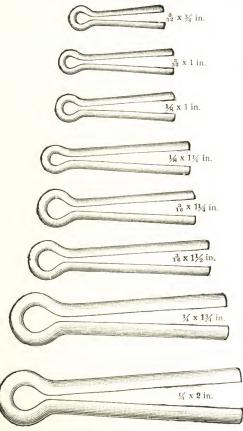
Weights & Measures.



"STAR BRAND" Brass Spring Cotters.



An assortment of the leading sizes, carried at mill, enables us to make prompt shipments.



IMPORTERS AND DEALERS

IN

INGOT AND PIG METALS

INGOT COPPER

PIG and BAR TIN

PIG LEAD

ANTIMONY

SPELTER

BABBITT METAL

Roofing Material.

> Weights & Measures.



U. T. HUNGERFORD BRASS AND COPPER CO.

MEMORANDA





DEPARTMENT No. 14.

ROOFING MATERIALS.

Roofing Material.

Weights & Measures.

> graphi Code.

228 U. T. HUNGERFORD BRASS AND COPPER CO.

Carried in Stock, ready for immediate shipment:



"STAR BRAND"

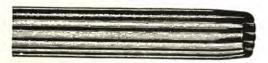
Copper Leader or Conductor Pipes.

IN 10 FEET LENGTHS.





SQUARE CONDUCTOR—Corrugated.



ROUND CONDUCTOR—Corrugated.



SQUARE CONDUCTOR—Plain.



ROUND CONDUCTOR-Plain.

This pipe is suited to all classes of work where Strength and Durability are desired. It is uniform in diameter and more rigid than any other, and is therefore unequaled for general use.

U. T. HUNGERFORD BRASS AND COPPER CO. 2281

Carried in Stock, ready for immediate shipment:



"STAR BRAND"
COPPER
Patent Corrugated
Elbows and Shoes.
ROUND ELBOWS.

















SQUARE ELBOWS.



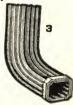












Weights & Measures.

graphic Code.



Size-Inches

14 Ounce 16

Price List "STAR BRAND" Copper Conductor Pipe.



Price Per Foot. PLAIN AND CORRUGATED ROUND.

31/2 & 4

21/6 x 3

16 "	.40	.5		. 65 . 70		85 9£	$\frac{1.00}{1.08}$
	Po	LYG ON-	-Corri	JGATEI).		
Size—Inches	2	3		4	1	5	6
14 Ounce 16	.45 .48	.60		.72 .77	1.	93 00	1.10 1.18
	Sq	UARE-	Corru	GATED,			
Size-Inches	٠)		3		4		5
14 Ounce 16 "	.42		.52		.67 .72		.87
Eaves 7		gh—C Price 1	er Fo	ot.		oppe	r,
Size-Inches	3	31/2	4	5	6	7	8
14 Ounce 16 "	.31	.36	.40	.50	.61	.71	.82

DOUBLE BEAD-LAP JOINT.

)		, 00	.12	. 00	. 94
	Singi	LE BEA	D-SL	P Join	T.		
Size—Inches	3	31/2	4	5	6	7	8
14 Ounce	,34 ,36	.39	.43	.53	.64	.74	.85

Double Bead - SLIP Joint.								
14 Ounce 16 "	.40 .42	.45	.49 .53	.59	.70 .75	.80	.91	

Price List.



"STAR BRAND" Copper



Elbows and Shoes.

Round, Corrugated and Plain.

14 OUNCE.

Size	Elbows Nos. 0-1-2-3	Shoes and No. 4 Elbows
2 Inches 21/2 " 331/2 "	.70 Each .90 ". .90 ". 1.35 ".	.75 Each 1.00 " 1.00 " 1.50 "
5 "	1.35 " 2.00 " 2.85 "	1.50 " 2.25 " 3.15 "

16 OUNCE.

Size	Flbows Nos. 0-1-2-3	Shoes and No. 4 Elbow		
2 Inches	.75 Each	.85 Each		
21/2 "	1.00	1,10 "		
3/2 "	1.00 "	1.10 "		
31/2 "	1.50	1.65 **		
4 11	1.50 ''	1.65		
5 4	2.25	2.50 "		
6 4	3.15 "	3,50 **		

Polygon and Square, Corrugated.

14 OUNCE.

Size	Elbows Nos. 0-1-2-3	Shoes and No. 4 Elbov		
2 Inches	.85 Each	.90 Each		
3 "	1.10 "	1.20 "		
4 "	1.60 "	1.80 "		
5 "	2.40 "	2.75 "		

16 OUNCE.

Size	Elbows Nos. 0-1-2-3	Shoes and No. 4 Elbows
2 Inches	.90 Each	1.05 Each
3 "	1.20 ''	1.35 "
4 "	1.80 ''	2.00 "
5 "	2.75 ''	3.00 "

DISCOUNT QUOTED ON APPLICATION.

Weights & Measures.



230 U. T. HUNGERFORD BRASS AND COPPER CO.

Carried in Stock, ready for immediate shipment:



"STAR BRAND" COPPER EAVES TROUGH



IN LENGHTS OF 10 FEET.



PATENT SLIP JOINT-Single Bead.



LAP JOINT-Single Bead.

COPPER MITRES



Outside Corner Mitre.



Inside Corner Mitre.

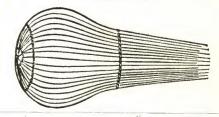
Price List.



"STAR BRAND"

Round Wire Conductor Strainers





	KEGU	LAR	HEAVY			
Size of Pipe. Inches.	Galvanized Iron. Per Doz.	Copper. Per Doz.	Galvanized Iron. Per Doz.	Copper. Per Doz.		
2 3	\$1.00 1.40	\$2.25 3.00	\$2.50 3.00	\$4.00 5.50		
4 5 6	2.00 3.50 4.50	4.75	4.00 6.00 8.00	$8.00 \\ 12.00 \\ 16.00$		

Star Brand" Square Wire Conductor Strainers

Size of Pipe. Inches.	Galvanized Iron. Per Doz.	Copper Per Doz,
2 x 2	\$1.50	\$2.25
2×3	1.80	2.70
2×4	2.25	3.40
3 x 3	2.25	3.40
3×4	2.70	4.05
3×5	2.85	4.30
4 x 4	3.0)	4.50
4 x 5	3.30	5.95
4 x 6	4.35	6.55
5×6	6.00	9.00
6 x 8	6.75	10.25

All Sizes of Round Strainers in Stock from 2 to 6 inches.

Discount Quoted on Application.

Weights & Measures.



Carried in Stock ready for immediate shipment:



"STAR BRAND"

BOLTS and NUTS





ROUND HEAD BRASS CORNICE BOLTS

 $^8_{16}$ in. dia. or No. 10-24 thread. $^{1\!\!/}_{2},~5\!\!/_{8}$ and 34 in. long.

¼ in. dia. or No. 14-20 thread. ½, 5%, ¾, 1 and 1¼ in. long.

FLAT HEAD BRASS CORNICE BOLTS

in. día. or No. 10-24 thread.
 ½ and ¾ in. long.
 ¼ in. dia. or No. 14-20 thread.
 ½, ¾, 1, and 1¼ in. long.



SQUARE AND HEXAGON BRASS NUTS

No. 10-24 thread and No. 14-20 thread.

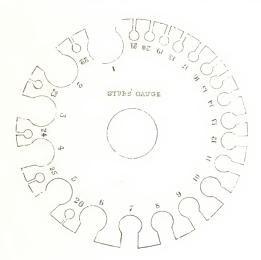
square IRON NUTS

No. 10-24 thread and No. 14-20 thread.



WEIGHTS AND MEASURES.





STUBS', OR OLD GAUGE.

Is considered the standard for the following;

Seamless Brass and Copper Tubing. Soft Rolled Copper.

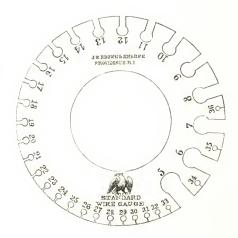
Cold Rolled Copper.

Soft, Hard and Spring Brass Wire to No. 21.

Copper Wire to No. 21, Inclusive.

Yellow Metal in Sheets and Plates,

When no gauge is specified, we will furnish all above goods by Stubs' or "Old" Gauge.



BROWN & SHARPE'S OR **NEW GAUGE**

Is considered the standard for the following:

Sheet and Roll Brass and Bronze. German Silver Sheets and Rolls. German Silver Wire. Brazed Brass and Copper Tube. Brass Moulding and Angle Brass. Brass Door Rail.

When no Gauge is specified, we will furnish all above goods by Brown & Sharpe's Gauge.

TABLE SHOWING DIFFERENCE BETWEEN WIRE GAUGES.

]	British Impe	rial	Washburn		D
No.		Standard.	London	. & Moen.	Stubs'.	Brown & Sharpe's.
00000	00	.500			*******	
0000	00	.464			*******	
000	00	.432				*
00	90	.400	454		.454	400
0	00	.372	.425		.425	.460
	00	.348	.380			.40964
	0	.324	.340		.380	.36480
	1	.300	900	000	.340	.32495
	2	0	004		.300	. 28930
	3	OMO	.284		.284	.25763
	4	000	.259		.259	.22942
	4	212	.238		.238	. 20431
	5	.212	.220	207	.220	.18194
	6	.192	.203	.192	.203	.16202
	7	.176	.180	100		.14428
	8	.160	.165	4.00		
	9	.144	.148	4 40	.165	.12849
1	00	.128	404	400	.148	.11443
1	1	.116	100	100	.134	.10189
					.120	.09074
1	2	.104	.109	.105	.109	.08081
1	3	.092	.095	.092	.095	.07196
1	4	.080	.083	.080	.083	.06408
1	5	.072	.072	.072	.072	.05707
1	6	.064	.065	.063	.065	.05082
1	7	.056	.058	Om 4		
1	8	.048	0.40	O 4 mm	.058	.04525
1	9	.040	0.10	0.44	.049	.04030
2	0	.036	OOM	.041	.042	.03589
	1	.032	OBIL	.035	.035	.03196
- 0	0			.032	.032	.02846
2	2	.028	.0295	.028	.028	.025347
2	3	.024	.027	.025	.025	.022571
2	4	.055	.025	.023	.022	.0201
2	5	.020	.023	.020	.020	.0179
2	6	.018	.0205	.018	.018	.01594
2	7	.0164	.01875	.017		-
2	3	.0148	0.4.0.4		.016	.014195
20	9	.0136	0144	0.11	.014	.012641
30)	.0124	.0155 $.01375$.015	.013	.011257
	í	0116	.01225	.014	.012	.010025
- 0				.0135	.010	.008928
37	2	.0108	.01125	.013	.009	.00795
35	3	.0100	.01025	.011	.008	.00708
34	1	.0092	.0095	.010	.007	.0063
35	5	.0084	.009	.0095	.005	.00561
36		.0076	.0075	.009	.004	.005
37	7	.0068	.0065			
38	3	.0060	O O bullions	.0085		.00445
36)	.0052		.008		.003965
40)	.0032	.005	.0075		.003531
41		.0048	.0045	.007		.003144
46						
45		.004				
44		.0036				
		.0032				
					-	

TABLE OF DECIMAL EQUIVALENTS

OF

8ths, 16ths, 32ds, and 64ths of an inch,

For use in Connection with the Micrometer Caliper.

8ths.			64ths.		
6 inch	Equals	.125	1 inch	Equals	.015625
8 111011	12quus	.250	3 64 "	"	.046875
4 "	,,	.375	5 4 6 4 "	#	.078125
8 "		.500	64 7 64	#	.109375
2 " 8 " 4 " 8 "		.625	9 "	"	140625
8 "		.750	6 4	17	.171875
4 "	"	.875	64	11	.203125
8 "	, ,	.0.0	15 "	"	.234375
16ths.			64	"	.265625
inch	Equals	.0625	6 4 1 9 n	"	.296875
inch	13quais	.1875	84	"	.328125
8 " 6 "	"	.3125	6 4 2 3	"	359375
7 "	"	.4375	64 25	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	390625
65	"	.5625	64 27	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.421875
9 11 11 11 11 11 11 11 11 11 11 11 11 11	,	.6875	64	"	453124
6	"	.8125	64		484375
965	"	.9375	64 33	"	515625
16 "	1	.00.0	84 "	"	546875
	32ds.		64	"	578125
1 inch	Equals	.03125	84	"	609375
	Equais	.09375	6 4 4 1 "	,,	640625
3 7	"	.15625	64 48 "	"	671875
5 / / 8 2 //	"	.13025	64 45 "	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	703125
3 2	"	.28125	64	,,	734375
3 2 "	"	.34375	64 "	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.765625
3 2 "	"	.40625	51 "	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.796875
3 2 "	"	.46875	64 "	,,	.828125
32	"	.53125	55 "		.859375
32 "		.59375	64	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.890625
32 "	"	.65625	64 59 "	"	.921878
3 2 "	"	.71875	61 "	"	.953123
9 2	"		и и и и и и и и и и и и и и и и и и и	"	.984373
2 D W	"	.78125	64	"	
32 "	И	.84375			
n n n n n n n n n n n n n n n n n n n	N	.90625	1		
31 "	"	. 96875	1		1

TABLE OF DECIMAL EQUIVALENTS

OF

Millimeters and Fractions of Millimeters.

 $\frac{1}{100}$ mm. = .0003937 inch.

mm. inches.	mm. inches
$\frac{26}{50} = .02047$	2 = .07874
$\frac{27}{50} = .02126$	3 = .11811
$\frac{28}{66} = .02205$	
$\frac{29}{8} = .02283$	4 = .15748 $5 = .19685$
$\frac{50}{6} = .02362$	6 = .23622
$\frac{31}{55} = .02441$	7 = .27559
$\frac{32}{52} = .02520$	8 = .31496
$\frac{88}{8} = .02598$	9 = .35433
$\frac{34}{54} = .02677$	10 = .39370
$\frac{35}{5} = .02756$	11 = .43307
$\frac{36}{6} = 02835$	12 = .47244
$\frac{37}{2} = 02913$	13 = .51181
$\frac{88}{88} = 02992$	14 = .55118
$\frac{39}{28} = .03071$	15 = .59055
$\frac{40}{9} = 03150$	16 = .62992
$\frac{41}{6} = 03228$	17 = .66929
$\frac{48}{2} = 03307$	18 = .70866
$\frac{48}{3} = 03386$	19 = .74803
$\frac{44}{4} = .03465$	20 = .78740
$\frac{45}{6} = 03543$	21 = .82677
$\frac{46}{6} = .03622$	22 = .86614
$\frac{47}{6} = 03701$	23 = .90551
$\frac{48}{8} = .03780$	24 = .94488
$\frac{49}{9} = .03858$	25 = .98425
1 = .03937	26 = 1.02362
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

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10 mm, = 1 Centimeter = 0.3937 inches.
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 $25.4 \,\mathrm{mm.} = 1 \,\mathrm{English}$ Inch.

¹⁰ cm. = 1 Decimeter = 3.937 "

¹⁰ dm. = 1 Meter = 39.37

TABLE OF DECIMAL EQUIVALENTS

OF THE

Numbers of Twist Drill and Steel Wire Gauge.

No.	Size of No, in Decimals of Inches,	No.	Size of No. in Decimals of Inches.	No.	Size of No. in Decimals of Inches
1	.2280	28	.1405	55	. 0520
2	.2210	29	.1360	56	.0465
3	.2130	30	.1285	57	.0430
2 3 4 5	.2090	31	.1200	58	.0420
5	.2055	32	.1160	59	.0410
$\frac{6}{7}$.2040	33	.1130	60	.0400
7	.2010	34	.1110	61	.0390
	.1990	35	.1100	62	.0380
9	.1960	36	.1065	63	.0370
10	.1935	37	.1040	64	.0360
11	.1910	38	.1015	65	. 0350
12	.1890	39	.0995	66	.0330
13	. 1850	40	.0980	67	.0320
14	.1820	41	.0960	68	.0310
15	.1800	42	.0935	69	.02925
16	.1770	43	.0890	70	.0280
17	.1730	44	.0860	71	.0260
18	. 1695	45	.0820	72	.0250
19	.1660	46	.0810	73	.0240
20	.1610	47	.0785	74	.0225
21	.1590	48	.0760	75	.0210
22	.1570	49	.0730	76	.0200
23	. 1540	50	.0700	77	.0180
24	.1520	51	.0670	78	.0160
25	.1495	52	.0635	79	.0145
26	.1470	53	.0595	80	. 0135
27	. 1440	54	.0550		

TABLE OF WEIGHTS PER SQUARE FOOT OF COPPER AND BRASS SHEETS.

AM	IERICAN, OR B. & S. GAUGE.	COPPER.	Brass.
No.	Thickness.	Lbs.	Lbs.
0000 000 00 0 1	.46 in., or 7-16 in. full .40964 in. .3648 " or ½ in. scant. .32486"	20.838 18.557 16.525 14.716 13.105	19,688 17,533 15,613 13,904 12,382
2	.25763 " or ¼ in. full	11.670	11.027
3	.22942 "	10.392	9.819
4	.20431 "	9.255	8.745
5	.18194 " or 3-16 in. scant	8.242	7.788
6	.16202 "	7.340	6.935
7 8 9 10	.14428 ·	6.536 5.821 5.183 4.616 4.110	6.175 5.499 4.898 4.361 3.884
12	.0808 "	3.66	3,457
13		3.26	3.08
14		2.90	2.743
15		2.585	2.442
16		2.302	2.175
17	.045257"	2.05	1,937
18	.0403 "	1.825	1,725
19	.0359 "	1.626	1,536
20	.0320 "	1.448	1,367
21	.02846 "	1.289	1,218
22	.02535 ''	1.148	1.085
23		1.023	.966
24		.910	.860
25		.811	.766
26		.722	.682
27	.01419 "	.643	.608
28		.573	.541
29		.510	.482
30		.454	.429
31		.404	.382
32 33 34 35 36	.0079 '' .0071 '' .0063 '' .0056 ''	.286	.340 .303 .269 .240 .214
37	.00445 ''	.202	.191
38	.00396 ''	.180	.170
39	.00353 ''	.160	.151
40	.00314 ''	.142	.135

These weights are theoretically correct, but variations must be expected in practice.

TABLE OF WEIGHTS PER SQUARE FOOT OF COPPER AND BRASS SHEETS.

	STUBS' GAUGE.	COPPER.	Brass.
No.	Thickness.	Lbs.	Lbs.
0000	464 in, or 7-16 in, full	20.556	19.431
000	425 "	19.253	18.19
00	380 " or ¾ in, full.	17.214	16.264
0	340 " '11-32 in, scant.	15.402	14.552
1	300 " '19-64 " full.	13.59	12.84
2	.284 ' ' ' 9-32 ' ' ' ' .259 ' ' '/4 ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	12.865	12.155
3		11.733	11.09
4		10.781	10.19
5		9.966	9.416
6		9.20	8.689
7 8 9 10	.180 " " 3-16 " scant	8.154 7.475 6.704 6.070 5.436	7.704 7.062 6.334 5.735 5.137
12	.109 " " 7-64 "	4.938	4.667
13		4.303	4.066
14		3.760	3.552
15		3.262	3.08
16		2.945	2.78
17	.058 " 1-16 " scant	2.627	2.48
18		2.220	2.10
19		1.90	1.80
20		1.59	1.50
21		1.45	1.37
22	.028 '' .025 '' .022 '' .020 '' .018 ''	1.27	1.20
23		1.13	1.07
24		.997	.941
25		.906	.856
26		.815	.770
27	.016 " or 1-64 in	.725	.685
28		.634	.599
29		.589	.556
30		.544	.514
31		.453	.428
32 33 34 35 36	.009 '' .008 '' .007 '' .004 ''	.362 .317 .227	.385 .342 .2996 .214 .171

These weights are theoretically correct, but variations must be expected in practice.



TABLE OF WEIGHTS IN POUNDS OF

Per 100 Lineal Feet

For Weight of Copper Strip Add 5%.

U	MO	AND	COLLEK	
2 in.	W'g't	292,217 292,217 260,217 231,733	206.307 183.753 163.65 145.75 129.88	115,583 102,917 91,65 81,683 72,688
1½ in	W'g't	246.1 219.163 195.163 173.8		86.688 77.187 68.738 61.225 64.518
1½ in.	W'g't	205.083 182.635 162.635 144.833		72. 324 64. 823 57. 281 51. 021 45. 027
1 in.	W'g't	164.067 146.108 130.108 115.867	103.183 91.802 81.825 72.875 64.9	57.792 51.458 45.825 40.817 86.842
34 in.	W'g't	123.05 109.581 97.581 86.9		43.348 38.594 34.369 30.613 27.256
% in.	W'g't	102.542 91.318 81.318 72.417	64.49 57.432 51.141 45.547 40.563	38.12 39.161 28.641 25.51
9 in.	W'g't	92.238 82.186 73.186 65.175	58.041 51.689 46.027 40.892 36.506	22.945 22.959 22.959 20.442
½ in.	W'g't	82.033 73.054 65.054 57.988	51.592 45.946 40.913 36.438 32.43	28.816 25.729 22.918 20.408 18.171
16 in.	W'g't	71.779 68.922 56.922 50.692	45.143 40.203 35.797 31.883 28.394	25.284 22.513 20.048 17.857
18 in. 13 in. 14 in. 15 in. 38 in.	W'g't W'g't	61.525 54.791 48.791 43.45	38.694 34.459 30.684 27.328	21.672 19.237 17.184 15.306
ie in.	W'g':	51.271 15.659 40.659 36.208	796 82.245 978 28.716 456 25.57 219 22.773 225 20.281	18.06 16.081 14.32 12.755
¼ in.	Wgit	41.017 36.527 82.527 28.967	88882	14.448 12.865 11.456 10.204
ıs in.	W'g't	30.763 27.395 24.395 21.725	19.347 17.23 15.342 13.664 12.169	9.6481 8.5921 7.6531
	W.g't W'	20.508 18.264 16.264 14.484	12.898 11.486 10.228 9.109 8.113	7.224 6.432 5.728 5.102
Widths	Decim'l	.460 .40964 .3648 .82486	2893 25763 22942 20131 18194	.16202 .14428 .12849 .11443
S.	B, & Gau	2 000	- d3 c0 d rc	@ t- & C ;

. 733 . 617 . 833 . 717	286.25 28.283 28.75 28.75 22.783	18.083 16.1 14.833 12.767	10.133 10.133 8.033 7.150 6.867 5.667 4.483	3.567 3.183 2.833 2.517 2.25
64. 57. 45. 40.	38.88.88	282	100001-07004	4 0000000
48.55 48.213 38.5 34.238 30.525	27 188 24.213 21.563 19.2 17.088	15.225 18.563 12.075 10.75	6.025.00 6.00 6.00 6.00 6.00 6.00 6.00 6.00	
40,458 36,01 32,083 28,573 25,438	22.656 20.177 17.969 16.	11.3 10.063 8.959 7.978	6.353 6.353 6.353 7.021 7.021 7.073	2.23 1.99 1.771 1.573 1.406
82.367 25.667 22.858 20.35	18.125 16.142 14.375 12.	10.15 9.042 8.05 7.167 6.383	00000000000000000000000000000000000000	2
24.275 21.606 19.25 17.144 15.263	13.594 12.106 10.781 9.6 8.544	7.613 6.781 6.038 5.375 4.788	2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.	1.333 1.194 1.068 1.068 1.944 1.844
20.229 18.005 16.042 14.286	11.328 10.089 8.984 8.	6.344 5.651 5.031 4.479 8.99	25.53.00 25.	1.115 1.995 1.885 1.786 1.786
18.205 16.205 14.438 12.558	10.195 9.08 8.086 7.2 6.408	5.71 5.086 4.528 4.032 8.591	20.00 1.191 20.000 1.191 26.000 1.191 26.000 1.191	1.125 1.003 1.008 7.03 1.008 1.008 1.008
16.183 12.833 11.429	9.063 8.071 7.188 6.4 5.696	5.075 4.521 4.025 3.583 3.192	25.533 25.533 1.788 1.788 1.262 1.262 1.262	
14.161 12.601 11.229 10.000	7.93 7.062 6.289 5.6 4.984	4.441 3.956 3.522 3.135 2.793	2.486 2.217 1.757 1.564 1.393 1.124 1.105	. 62 . 63 . 55 . 492
12.138 10.803 9.625 8.572	6.053 6.053 7.891 4.8 4.272	3.806 3.391 3.019 2.688 2.394	2 131 1 691 1 50 1 341 1 062 1 062	
9.003 8.021 7.143	6.839 5.064 5.044 4.492 4.	3.172 2.826 2.516 2.239 1.995	1.776 1.583 1.255 1.255 1.117 1.885	.625 .448 .443 .393
8.0921 7.202 6.417 5.115	5.088 4.531 4.035 8.2.594 2.848	2.538 2.26 2.013 1.792 1.596	1.267 1.267 1.004 1.004 1.096 1.796 1.631	
6 099 6 462 4 813 4 286	3.816 3.898 3.027 2.695 2.4 2.4	1.903 1.509 1.344 1.197	3.845 	25.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5
3 209 2 857 2 857				22.23 02.22.3 177.1 141.1
.09074 .08031 .07196	.05707 .05082 .04525 .0408 .08589	0.2846 .025847 .022571 .0201	01594 014195 012641 011257 010025 00795 00798	.00561 .00561 .00445 .008965 .008581 .008581
1000	119	28822	25.55.55.55.55.55.55.55.55.55.55.55.55.5	25 25 25 25 25 25 25 25 25 25 25 25 25 2

TABLE OF WEIGHTS PER LINEAL FOOT OF BRASS AND COPPER ROD.

	BRASS.		COPPER.		
INCHES.	ROUND.	SQUARE.	ROUND.	SQUARE	
	Lbs.	Lbs.	Lbs.	Lbs.	
1-16	.011	.014	.01155	.0147	
1/8	.045	.055	.047	.060	
$\frac{1}{3}$.100	.125	.106	.13497	
1/4	.175	, 225	.189	,241	
5-16	.275	.350	.296	.377	
3/8 7-16	.395	.510	.426	.542	
7-16	.540	.690	.579	.737	
9-16	.710	.905	.757	.964	
	.90	1.15	.958	1.22	
5/8	1,10	1.40	1.182	1.51	
11-16	1.35	1.72	1.431	1.82	
3/4	1.66	2.05	1,703	2.17	
13-16	1.85	2.40	1.998	2.54	
7/8 15-16	2.15	2.75	2,318	2.95	
15-16	2.48	3.15	2,660	3.39	
1	2.85	3.65	3.03	3.86	
1 1-16	3,20	4.08	3.42	4.35	
1 ½8 1 3–16	3.57	4.55	3.831	4.88	
1 3-16	3.97	5.08	4,269	5,44	
1 1/4	4 41	5.65	4.723	6.01	
1 5-16	4.86	6.22	5.21	6,63	
13/6 1 7-16	5.35	6.81	5.723	7.24	
17-16	5.85	7.45	6.255	7.97	
1½ 1 9-16	6.37	8.13	6.811	8.67	
	6.92	8,83	7.39	9.41	
15/8	7.48	9.55	7.993	10.18	
1 11-16	8.05	10.27	8.45	10.73	
13/4 1 13-16	8.65	11.00	9.27	11.80	
	9.29	11.82	9.76	12.43	
17/8	9,95	12.68	10.642	13.55	
1 15-16 2	10.58	13.50	11.11	14.15	
21/8	11.25	14.35	12.108	15.42	
278	12.78	16.27	13.668	17.42	
21/4	14.32	18.24	15.325	19.51	
23%	15.96	20.32	17.075	21.74	
21/2	17.68	22.53	18.916	24.09	
25/8	19.50	24.83	20.856	26.56	
23/4	21.40	27,25	22.891	29.05	
27/8	23.39	29.78	25.019	31.86	
	25.47	32.43	27.243	34.69	
31/4	30.45	38.77	31.972	40.71	
31/2	35.31	44.96	37.081	47.22	
4	46.124	58,73	48.433	61.67	

To find the weight of Octagon Rod, take the weight of Round Rod of a given size and multiply by 1,084.
To find the weight of Hexagon Rod, take the weight of Round Rod of a given size and multiply by 1.12

These tables are theoretically correct, but variations must be expected in practice.



DRAWN COPPER BARS.

Any Size or Shape that may be Required.

Highest Conductivity Guaranteed.

Approximate Weight per Lineal Foot of Standard Sizes.

RECTANGULAR OR FLAT.

Size,	Lbs.	Size.	Lbs.	Size.	Lbs.
1 x ½ in.	.12	3 x ½ in.	.36	½ x 1¾ in.	1.68
1 X 5/ "	.15	3 X 5/ "	.45	1/4 x 2 "	1.93
1 X 34 "	.18	3 X 34 "	. 54	3/8 x 1 "	1.44
1 x 7/8 "	.21	3 X 7/8 "	. 63	3/8 x 11/4 "	1.80
1 x 1 "	.24	3 x 1 · ·	.72	3/8 x 11/2 "	2.16
1 x 11/4 "	.30	3 x 11/4 "	.90	3/8 x 13/4 "	2.52
1 x 1½ "	.36	3 x 1½ "	1.08	3/8 x 2 "	2.88
1/8 X 1/2 "	.24	3 x 134 ··	1.26	3/8 x 21/4 "	3.24
1/8 x 5/8 "	.30	3 x 2 "	1.44	3/8 x 21/2 "	3.60
1/8 x 3/4 "	.36	1/4 x 1/2 "	.48	½ x 1 "	1.93
1/8 x 7/8 "	.42	14 x 5% "	.60	1/2 x 11/4 "	2.41
½ x 1 ''	.48	1/4 x 3/4 "	.72	½ x 1½ "	2.89
1/8 x 11/4 "	.60	1/4 x 7/8 "	.84	1/2 x 13/4 "	3.37
1/8 x 11/2 "	.72		.97	1/2 x 2 "	3.86
½ x 1¾ "	.84	14 x 114 "	1.20	½ x 21/4 "	4.34
1/8 x 2 "	.96	14 x 1½ "	1.44	1/2 x 21/2 "	4.83

To find the weight of Brass Bars of same dimensions, deduct 5 per cent.



Yellow or Muntz Metal Rods.

Approximate Weights per Lineal Foot.

Size.	YELLOW	METAL.
Size.	Round.	Square.
¼ in. diam.	.18	.23
3/8 "	.39	.50
7 11 11	.54	.69
1/2 11	.71	.90
9 11	.90	1.15
5% 11 11	1.10	1.15
11 11	1.35	
3/4 11	1.66	1.72
18 11	1.85	2.05
14 in. diam. 38 '' '' 17 '' '' 18 '' 18 '' '' 18	2.15	2.40
15 46	2.48	2.75
16	2.85	3.15
1/8 "	3.57	3.65
1% " "	4.41	4.55
3/ 11 11	5.35	5.65
1% " "	$\frac{3.33}{6.37}$	6.81
5/2 11 11		8.13
3/4 " "	7.48	9.55
7/8	8.65	11.00
78	9.95	12.68
1/8	11.25	14.35
78	12.78	16.27
3/ 16 11	14.32	18.24
78	15.96	20.32
3/ 11 11	17.68	22.53
18 35 16 34	21.40	27.25
14	25.47	32.43
1/2 " "	30.45	38.77
3/4 11	35.31	44.96
4	40.72	50.72
1/ 11 11	46.124	58.73
1/2 11	52.48	65.60
2	58.66	72.80
4	65.44	81.60
	72.32	90.40

MUNTZ OR YELLOW METAL SHEETS, PLATES, SEGMENTS AND CIRCLES.

For Condenser Heads and Supporting Plates.

Furnished in any shape or quantity.

Approximate Weights of Yellow Metal Plates

PER Square Foot.

1/4	inch	thick		76 lbs.
5 16	6.4	4.6		18 "
3/8	4.6	6.		25 ''
7	4.6	6.6		00 ''
1/2		6.6		35 ''
9 16	4.6	4.4	24.5	30 ''
5/8	4.6	4.4		12 "
3/4	- 4.6	66	32.4	16 "
7/8	66	6.6	37.8	85 ''
1	4.4	4.4		30 "
11/8	4.6		48.0	69 "
11/4		6.6	54.	
13/8		4.6	59.8	
11/2		6 6	65,0	
15%			70.	
13/4		4.6	75.8	
2		6 4		
21/4		6.6	97.	
21/2		4.6		
3	2 44	4.6		
9				00

The area of a circle is equal to the square of the diameter multiplied by .7854.

TOBIN BRONZE SHEETS AND PLATES,

IN POUNDS PER SQUARE FOOT.

Thickness	Weight	Thickness	Weight
$\frac{1}{16}$ in.	2.72	18 in.	35,35
1/8 "	5.44	7/8	38.06
1/8 3 16	8.16	15 4	40.78
1/4 · · · · · · · · · · · · · · · · · · ·	10.88	1 "	43,50
5 44	13.59	1,1,44	46.22
3/8 "	16.31	11/8 "	48.94
1 6 3/8 7 1 6	19.03	1 3 "	51.66
1/2 "	21.75	11/4 "	54.38
1/2 · · · /2 · · · · · · · · · · · · · ·	24.47	15 "	57.10
5/8 "	27.19	13/8 "	59.82
116	29,91	1,7 "	62.53
3/4 '	32.63	11/2 "	65,25

APPROXIMATE WEIGHTS OF ROUND AND HEXAGON TOBIN BRONZE RODS,

IN LBS., ONE FOOT LONG.

Diameter	Round	Hexagon	Diameter	Round	Hexagon
¼ in.	.177	.200	1 7/8 in.	10,00	11.25
6 6 7 6 4 4 6 6 8 4 6 6 8 4 6 6 8 4 6 6 8 6	.279	.313	2 "	11.38	12.80
3/8 "	.399	. 450	21/8 "	12.87	14.50
7 66	.544	.612	21/4 "	14.43	16.20
1/2 "	.711	,800	23/8 "	16.06	17.98
9 44	. 899	1.012	21/2 "	17.80	31,00
5/8 "	1.11	1.177	25/8 "	19.60	
11 66	1.34	1.512	234 "	21,53	
3/4	1.60	1.694	27/8 "	23.52	
13 44	1.88	2.112	3 "	25,63	
7/8 "	2.18	2.306	31/4 "	30.05	
15 11	2.50	2.812	31/2 '	34.86	
1 "	2.84	3.250	334 "	40.01	
11/8 "	3.60	4,050	4 "	45,57	
11/4 "	4.46	5.000	41/4 "	51.44	
13/8 "	5.36	6.050	4 1/2 "	57.64	
11/2 "	6.42	7.120	434 "	84.24	
15/8 "	7.50	8.450	5 "	71,16	
134 "	8.70	9.800	51/2 "	86.95	

TABLE OF WEIGHTS OF SHEET COPPER PER SQUARE FOOT, AND THICKNESS PER STUBS' GAUGE.

Rolled Copper has specific gravity of 8.93. One cubic foot weighs 558,100 lbs.

SPECIAL SIZES MADE TO ORDER.

-							
Stubs' Wire Gauge.	Thick- ness in Decimal Parts of 1 inch.	Weight per Square Foot,	Weight of Sheet 14 x 48 Inches.	Weight of Sheel 24 x 48 Inches.	Weight of Sheet 30 x 60 Inches.	Weight of Sheet 36 x 72 Inches.	Weight of Sheet 48 x 72 Inches.
35 33 31 28 27 26 25 24 22 21 19 18 16 15 14 13 12 11 10 9 8 7 6 6 5	.00537 .00806 .0107 .0134 .0161 .0181 .0215 .0242 .0329 .0430 .0538 .0645 .0754 .0860 .095 .109 .120 .134 .148 .165 .180 .203 .223	4 6 8 10 112 14 16 18 20 24 32 40 48 56 64 70 100 110 123 134 151 164	1.16 1.75 2.33 2.91 4.08 4.66 5.25 5.83 7. 9.33 11.66 14. 16.33 18.66	23 3 4 4 5 6 7 8 9 100 122 160 24 28 335 401/2 441/2 55 6 1 67 75 1/2 82	3. 12 4. 68 6. 25 7. 81 9. 87 10. 93 12. 50 14. 06 15. 62 31. 25 37. 50 43. 75 63 70 86 105 118 128	4.50 6.75 9 11.25 13.50 15.75 18.20 25.20 27.36 45 45 46 63 72 79 91 100 112 124 138 151 170 184	6 9 9 12 15 18 21 24 27 30 48 48 60 72 84 105 122 134 150 165 184 201 227 246
3 2 1 0	.259 .284 .300 .340	177 193 211 223 253		88½ 96 1051½ 111½ 126½	138 151 165 174 198	199 217 238 251 285	266 289 317 335 380

Approximate Weight of Sheet Copper per Square Foot IN FRACTIONAL PARTS OF AN INCH.

16	inch	thick	weighs	3	pounds	to	the	square	foot.
1/8		4.4	6.6	6	- 66		4.6	***	6.6
1/4	6.6	6.6	6.6	12	6.6	6.6	6.5	4.6	1.4
1/2	6.6	4.6	4.4	24	4.4		6.6	6.4	4.4
1		4.6	6 E	461	6 "	6.6	6.6	4.4	6.6

The area of a circle is equal to the square of the diameter mul-

The area of a circle is equal to the square of the diameter multiplied by 0.7854. The circumference of a circle is equal to the diameter multiplied by 8.1416.

To Ascertain the Weight of Copper.—Find the number of cubic inches in the piece, multiply by 0.5214, and the product will be the weight in pounds. Or, multiply the length and breadth (in feet) and that by the propulse per require foot. (in feet) and that by the pounds per square foot.

These Weights are theoretically correct, but variations must be expected in practice.

TABLE SHOWING WEIGHT PER FOOT

Stubs' or Birmingham Gauge. (To ascertain the weight of Seamless Copper Tubing

Gauge No.	3	4	5	6	7	8	9	10	11	12	13	14
Thickness of each No. in decimal parts of inch:	.259	.238	.220	.203	.180	.165	.148	.134	.120	.109	. 095	.083
Frac. of inch, correspond ing closely to Gauge Nos.	1/4	15		13	3 16	1164	964		1/8		3 3 2	. 64 64
Diameter Tubes, Inches												
\(\frac{1}{2}\) \(\frac{1}{2}\	1.47 1.65 2.03 2.22 2.29 3.35 3.72 4.49 4.47 7.48 6.71 7.08 8.59 8.59 9.70 10.45	1.41 1.58 1.75 2.09 2.44 2.78 3.12 3.81 4.15 4.50 4.84 5.5 5.5 6.21 6.56 6.56 6.7 7.59 8.27 8.62 8.62 8.93 8.93 8.93 8.93 8.93 8.93 8.93 8.93	1.82 2.30 2.61 3.32 3.25 3.57 3.88 4.20 4.52 5.15 5.79 6.11 6.42 6.42 6.7 7.38 7.69 8.83 8.83 8.85 7.86 8.86 8.86 8.96	1.28 1.43 1.57 2.16 2.45 3.36 4.21 4.50 4.80 4.80 5.58 7.14 4.7 7.7 4.3 7.7 9.8 9.8 9.8 9.8 9.8 9.8 9.8 9.8 9.8 9.8	1.18 1.31 1.44 1.57 1.70 1.96 2.22 2.48 2.74 3.00 3.26 3.52 4.04 4.30 4.56 4.82 5.34 4.55 6.62 6.63 6.64 6.70 7.42	$\begin{array}{c} 1.23\\ 1.35\\ 1.47\\ 2.07\\ 1.83\\ 2.07\\ 2.30\\ 2.54\\ 4.21\\ 3.02\\ 2.54\\ 4.92\\ 2.54\\ 6.11\\ 6.35\\ 6.83\\ 6.83\\ \end{array}$	1.67 1.88 2.10 2.31 2.52 2.74 2.95 3.16 3.38 3.59 3.80 4.02 4.23 5.30 5.50 5.50 5.51 5.52 6.15	$\begin{array}{c} 1.15\\ 1.24\\ 1.34\\ 1.53\\ 1.73\\ 1.92\\ 2.11\\ 2.50\\ 2.89\\ 3.08\\ 3.27\\ 3.47\\ 4.05\\ 4.05\\ 4.05\\ 5.01\\ 5.21\\ 5.59\\ \end{array}$	1.13 1.22 1.39 1.56 1.74 1.91 2.08 2.26 2.43 2.78 2.78 2.95 3.12 3.30 3.47 3.64 4.33 4.51 4.68 4.85 5.03	1.59 1.75 1.91 2.06 2.22 2.38 2.54 2.69 2.85 3.01 3.17 3.32 3.64 3.79 3.95 4.11 4.27 4.58	.170 .238 .307 .376 .444 .513 .650 .718 .787 .855 .924 .99 .1.13 .1.27 .1.40 .2.29 .2.23 .2.50 .2.23 .3.05 .3.19 .3.32 .3.33 .3.33 .3.33 .3.34 .34	.160 .220 .280 .340 .460 .520 .580 .580 .640 .700 .755 .88 .88 .1 .12 .1 .12 .1 .14 .1 .16 .2 .08 .2 .32 .2 .44 .2 .2 .32 .2 .4 .3

To determine weight per foot of a tube of a given weights given below under

Gauge No.	3	4	5	6	7	8	9	10	11	12	13	14
Increase in lbs. per foot :	1.5487	1.3977	1.1174	.9514	.7480	. 6285	. 5057	.4145	. 3324	.2743	. 2084	.1590

OF SEAMLESS BRASS TUBING.

Measured in Outside Diameters.

Add 5 per cent, to the Weights of Brass Tubing).

			-	-	-	-					-		
Gauge No.	15	16	17	18	19	20	21	22	23	24	25	26	27
hickness of each No. in lecimal parts of inch.	.072	.065	058	.049	.042	,035	.032	.028	.025	.022	. 020	.018	.016
rac, of inch, correspond ag closely to Gauge Nos.		16		3			32						64
Diameter lubes, Inches													
Nubes, Inches 16 16 17 18 18 18 18 18 18 18 18 18	1.60 1.71 1.81 1.91 2.02 2.12 2.23 2.33	.092 .139 .136 .233 .279 .326 .373 .420 .467 .514 .608 .655 .70 .79 .89 .89 .1.17 1.26 1.45 1.45 1.45 1.73 1.83 1.92 2.01	1.30 1.38 1.47 1.55 1.63 1.72 1.80 1.89	.078 .114 .149 .184 .220 .255 .290 .326 .361 .396 .432 .54 .61 .68 .75 .89 .89 .96 .1.10 .11.11 .124 .1.32 .1.39 .1.12 .1.39 .1.24 .1.39 .1.30	.040 .070 .101 .131 .161 .192 .252 .253 .313 .313 .373 .404 .434 .46 .59 .65 .71 .77 .77 .71 .77 .71 .71 .71 .71 .71	1.146	.034 .057 .080 .104 .127 .150 .219 .242 .265 .288 .311 .358 .404 .450 .496 .542 .588 .635 .681 .727 .773 .819 .912 .955 .912 .955 .912 .955 .912 .955 .955 .955 .955 .955 .955 .955 .95	.031 .051 .072 .092 .112 .112 .113 .213 .233 .233 .234 .354 .435 .476 .556 .597 .637 .637 .637 .637 .637 .638 .839 .839 .839 .839 .839 .839 .839 .8	.047	.026 .042 .058 .074 .090 .106 .121 .137 .153 .201 .217 .232 .248 .280 .375 .407 .639 .470 .534 .554 .566 .597 .629 .661 .693 .724	0.039 0.053 0.067	.035 .048 .061 .074 .087 .100 .113 .126 .178 .191 .204 .230 .256 .282 .308 .334 .412	.020 .032 .043 .045 .066 .066 .078 .089 .101 .112 .124 .136 .148 .159 .171 .182 .205 .228 .251 .274
3½ 3½ 3½	2.64 2.74	2.39	2.14	1.81	1.49 1.55 1.62	1.298	1.189	1.041	.895 .931 .967	.788 .820 .851			
3½ 3½ 3¾	2.85	$\frac{2.58}{2.67}$	2.30 2.39	$\frac{1.95}{2.02}$	1.68	1.399	1,281	1.122 1.162	1.003 1.039	.883 .915			
37/8	3.16	2.86	2.56	2,16	1.86			1.243					

Inside Diameter, add to weights in above list the corresponding gauge numbers.

Gauge No.	15	16	17	18	19	20	21	22	23	24	25	26	27
Increase in lbs. per foot:	.1197	.0975	.0777	. 0554	.0407	.0283	.0236	.0181	.0144	.0112	.0092	. 0075	. 0059

TABLE SHOWING WEIGHT PER FOOT

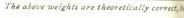
Stubs' or Birmingham Gauge.

(To ascertain the weights of Seamless Copper Tubing

Gauge No.	3	4	5	6	7	8	9	10	11	12
Thickness of each No. in decimal parts of inch.:	.259	.238	,220	.203	.180	.165	.148	.134	.120	.109
Frac. of inch, correspond- ing closely to Gauge Nos:	1/4	1 5 6 4		13 64	3 16	11	64	• • • • • • •	1/8	
Diameter Tubes, Inches										
4 4½, 4¼, 4½, 4½, 4½, 5½, 5½, 5½, 5½, 5½, 6½, 6½, 6¼, 77, 7½, 7½, 7½, 8½, 8½, 8½, 8½, 8½, 8½, 8½, 8	11.19 11.57 11.94 12.32 12.69 13.06 13.44 13.81 14.18 14.56 14.93 15.68 16.80 17.17 19.42 20.16 20.91 21.66 22.41 23.07 23.82 24.56 25.30	10.33 10.68 11.02 11.36 11.71 12.05 12.39 12.74 13.08 13.42 13.77 14.11 14.45 14.80 15.14 15.83 16.51 17.20 17.20 19.95 20.64 21.27 21.95 22.62 23.30	9.60 9.91 10.23 10.55 10.87 11.18 11.50 11.2.14 12.45 12.77 13.09 13.41 14.04 14.67 15.81 17.85 17.85 17.85 18.48 19.12 20.32 20.96 21.60	8.90 9.19 9.48 9.77 10.07 10.36 10.95 11.24 11.53 11.82 12.12 12.41 12.70 13.29 13.58 14.17 15.34 15.34 15.92 16.51 17.10 17.68 18.80 18.80 19.97	7.94 8.20 8.46 8.72 8.98 9.24 9.50 9.76 10.02 10.28 10.53 10.79 11.31 11.83 12.09 12.61 13.13 18.65 14.17 14.69 15.73 16.83 16.87 17.38 17.38	7.54	6.58 6.79 7.01 7.22 7.43 7.65 7.86 8.29 8.50 8.50 9.14 9.35 9.57 9.79 10.42 11.28 11.70 12.13 12.56 12.98 13.49 14.45 14.47	5.98 6.17 6.36 6.56 6.75 6.94 7.14 7.53 7.72 7.71 8.11 8.30 8.69 8.89 9.85 10.62 11.01 11.39 11.78 12.22 12.62 13.40	5.37 5.55 5.89 6.06 6.24 6.56 6.76 6.93 7.10 7.25 8.14 9.18 9.18 9.87 10.22 11.32 11	
71	r. 1									

To determine weight per foot of a tube of a give weights given below under corre

Gauge No.		4	5	6	7	8	9	10	11	12
lncrease in lbs. per foot :	1.5487	1.3077	1.1174	.9514	.7480	.6285	.5057	.4145	.3324	.2743





OF SEAMLESS BRASS TUBING.—Continued.

Measured in Outside Diameters,

Add 5 per cent, to the weights of Brass Tubing.)

Gauge No.	13	14	15	16	17	18	19	20	21	22	23	24
Thickness of each No, in decimal parts of Inch:	.095	.083	.072	.065	.058	.049	.042	.035	.032	.028	.025	.022
Frac, of inch, correspond- ing closely to Gauge Nos.:	3 2	5 6 4		10		3 64			32			
Diameter Tubes, Inches												
4½ 4½ 4½ 4½ 4½ 4¾ 4 5 5½ 5 5 5 5 6 6 4 6 6 4 7 7 7 7 7 7	4.424.56 4.694.83 4.975.11 5.244.55.56 5.565 5.793 6.0766.20 6.34466.75 7.03 7.7577.85	3.87 3.99 4.11 4.23 4.45 4.47 4.47 4.83 4.95 5.07 5.19 5.55 5.67 5.91 6.63 6.63 6.63 6.63	3.37 3.47 3.58 3.68 3.78 3.89 4.09 4.20 4.41 4.51 4.61 4.72 4.82 4.93 5.13 5.55 5.76 6.61 7	3.05 3.14 3.23 3.33 3.42 3.61 3.70 3.89 4.08 4.17 4.26 4.45 4.45 4.45 5.01 5.20 5.58	2.81 2.89 2.97 3.16 3.14 3.22 3.31 3.48 3.56 3.64 3.73 3.81 3.89 3.98 4.15 4.31 4.46 5.46	2.30 2.38 2.45 2.52 2.59 2.66 2.73 2.80 2.87 2.94 3.01 3.08 3.15 3.22 3.22 3.29 3.37 3.51 3.65 3.79 3.93	1.98 2.04 2.10 2.12 2.22 2.28 2.34 2.40 2.58 2.58 2.65 2.71 2.77 2.83 2.89	1.702 1.752 1.803 1.853 1.904 1.954 2.005 2.055 2.106 2.156 2.207 2.257 2.308 2.358 2.409	1.466 1.512 1.558 1.604 1.650 1.697 1.743 1.789 1.895 1.881 1.928 1.974 2.02	1.324 1.364 1.405 1.445 1.486 1.526 1.566 1.607	1.183 1.219	
8	8.71	7.63	6.64	7.05		1						
81/4												
8½ 8¾												

nside Diameter, add to weights in above list the sponding gauge numbers.

Gauge No. 13	14	15	16	17	18	19	20	21	22	23	24
Increase in Ibs. per foot. 2084	1590	.1197	.0975	0777	.0554	0407	.0283	. 0236	.0181	0144	0112

variations must be expected in practice.

Telegraphic Code.

254 U. T. HUNGERFORD BRASS AND COPPER CO.

TABLE OF WEIGHTS AND MEASUREMENTS OF "STAR BRAND"

REGULAR AND EXTRA HEAVY. IRON PIPE SIZES. SEAMLESS BRASS & COPPER TUBE.

	_	_	_	_	-	_	_	_			-	_		_		-	_	_			
10		43.000	10.750	10.019	870		340		78.840	.258		:	:		:		:		:	:	60
6	1	30,080		8.937	340		349		530	336		:			:		:			:	æ ;
œ	000	30,000	8 625	7.882	. 322		857		38,740 50,040 68.	214					:		:	_	::	:	œ ;
5	000	23,130	7 625	7 062	288		366		38.740	.193		-			:		:	_		• :	80
9	1 3	310	6 625	6.125	250		875		28.890	.172		900	88, 600		.437		.740		25,960	828	8
2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	007.01	5 563	5.062	.250		400			151	_	-	5 563	4.813	873		763		18, 190	.267	8
4%		13.800	5 000	4.500	.250		412		308	139	-	19.470	5 000		.875		:		14.180		80
*		12.600	4.500	4.000	.250		427		12,730 15,940 19,890	120				-	.841		814			233	8
3/2	000	10.900	4 000	8.500	.250		448		9.887	,118			14 385 1		.321		846		8.856 11.450	213	8
00	_		3 500	3.062	.219		461		7.888	109					.304		\$ 06		6.569	961.	00
22	1	0.400	2 875	2,500	188		518		_	960		2.360 3.300 4.250 5.460 8.300 11.200	1,743 2,478 3,465 4,462 5,733 8,715 11 760 1,050 1,315 1,660 1,900 2,375 2,875 8,500	2.815	.280	-	991			172	œ ;
25	000	#. W	840 1.050 1.315 1.660 1.900 2.875	2,062	157		203		2.038 3.855 4.783	070		5.480	2 375	1.272 1.494 1.938 2.315	.221		1006		938 R87 755 748 271 1,753 2,935 4,209	.148	11.8
1 1/2	004	9-000	1.900	1.600	.150		280		2.038	070.		4.250	1 900	1.494	508		1142		1,753	.128	11,75
*	001	200.00	1.660	1.062 1,368	.146		628		563 471 863 1.496	065		3.300	3,465	1.272	. 194		1250		1 271	.119	11%
-	-	30.1	1.315	1.062	.126		120			.059		2.360	2,478	. 951	. 185		1500		710 1	.107	11%
×.	0.00	1.600	1.050	.832	114		840		630	052		1.660	1.743	.786	. 157		1739		452	980	14
×.	000	000		625	.1075		1024		305	.048		1.200	840	542	149		2166		281	.088	14
2	900	•			960		1160		192	.043		.830	872	٠.	.127		2508		139	670	18
×	700		_		.083		1465		.10%	.040		.625	540	_	. 123		3401		.068	.075	18
20	040	000	405	.281	.064		1776		057	.036	-	.370	. 889	202	3.		4442		.033	.068	27
IRON PIPE SIZES.	REGULAR.	Diazs, weight per meat 100t. ,	Exact outside diameter	Exact inside diameter	Exact thickness of walls	Brass, theoretical safe work- ing pressure. Factor safety	Conter theoretical safe	working pressure. Factor	Internal area cross section	of thread	EXTRA HEAVY.	Brass, weight per lineal foot.	Copper, Exact outside diameter	Exact inside diameter	Exact thickness of wails Brass. theoretical safe work.	ing pressure. Factor safety	Copper, theoretical safe work-	ing pressure. Factor safety	Internal area cross section.	of thread	Number of threads per inch.

Norg.—Weights are in pounds, Diameters and thicknesses in inches, Areas in square inches. The safe working pressure is calculated on thickness of walls at bottom of thread and indicates pounds per square inch internal pressure.

APPROXIMATE WEIGHT OF

Iron Lined Brazed Brass Tubes.

3/8	inch	Diameter	٠.		.0.197	pounds	per	foot
$\frac{1}{2}$	6 6	6.6			.0.312			4.4
5/8	6.6	6.6			.0.400	4.	6.6	4.6
3/4	4.4				.0.514	6.6	4.6	4.6
7/8	4.4	6.6			0.720	6.6	66	4.4
1	4	6.6			.0.812	4.6	6.6	4.4
1 1/8	6	4.6			.1.063	4.6	66	6.6
11/4	6.6	4.4			.1.250	6.6	4.6	44
$1\frac{1}{2}$	4	6.6			.1.350	6.6	66	4.4
	6	6.6			.2.000	6.	6.6	4.4

Weight of Round Zinc Rods.

PER LINEAL FOOT.

3/8	inch	Diameter		0	0						.33	pounds
1/2	4.4	6.6									.58	6.6
5/8	4 6	6.6							٠		.90	4.4
3/4	66	6.6									1.30	6.6
7/8	6 6	6.6									1.78	6.6
1	"	6.6				٠.					2.32	6.6

Table of Weights BRAZED

3-16 to 3 1-4 Inch Outside Diameter,

To ascertain the Weights of Brazed Copper Tubing,

Fractions of an Inch. 3 6 4 6 4 6 6 4 6 6 6 6 6 6 6 6 6 6 6 6		3 2	5 6 4		1 6		
3 16 1/4					7.0		
1/4	•••						
							.12
5					.18	.17	.15
5 16 3 8			.27	.25	.23	.21	.19
16	.39	.36	.33	.31	.28	.25	.23
	.47	.43	.39	.36	.32	. 29	.26
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$.54	.49	.45	.41	.37	.33	.30
5/8 .74 .67	.61	.56	.51	.46	.42	.37	. 34
$\frac{11}{16}$.83 .76	. 69	.63	.57	.51	.46	.42	.37
/4 .00	.76	.69	.62	.56	.51	.46	.41
$\frac{13}{16}$ 1.01 .92	.83	.75	.68	.61	.55	.50	.45
7/8 1.11 1.00	.91	.82	.74	.67	. 60	.54	.48
$1^{\frac{15}{16}} \begin{vmatrix} 1.20 & 1.09 \\ 1.29 & 1.17 \end{vmatrix}$.98	.89	.80	.72	.64	.58	.52
11/ 1 40 1 99	$\frac{1.06}{1.20}$	$\frac{.95}{1.08}$	$\frac{.86}{.97}$.77	.69	.62	56
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		1.21	1.09	.98	.88	79	.70
	1.50	1.34	1.21	1.08	.97	.87	.78
411 0 00 4 00		1.47	1.32	1.19	1.06	.95	.85
457 0 004 00	1.79		1.44	1.29	1.16	1.03	.92
134 2.40 2.16	1.94		1.56	1.39	1.25	1.12	1.00
	2.08		1.67	1.50	1.34	1.20	1.07
2 2.77 2.49	2.23	2.00	1.79	1.60	1.43	1,28	1.14
21/8 2.96 2.66			1.91	1.71	1.53	1.36	1.22
$2\frac{1}{4}$ 3.15 2.82	2.53		2.02	1.81	1.62	1.44	1,29
$2\frac{3}{6}$ 3.33 2.99	2.67	2.39	2.14	1.91	1.71	1.53	1.36
21/6 3.52 3.15	2.82	2.52	2.26	2.02	1.80	1.61	1.44
2% 3.70 3.32	2.97		2.37	2.12	1.90	1.69	1.51
$2\frac{3}{4}$ 3.89 3.48		2.78	2.49	2.22	1.99	1.77	1.58
27/8 4.07 3.65	3.26	2.91	2.61	2.33	2.08	1.86	1.66
3		3.05	2.72	2.43	2.17	1.94	1.73
31/8		3.18	2.84	2.54	2.27	2.02	1.80
314	3.70	3.31	2.96	2.64	2.36	2.10	1.88

These weights are theoretically correct, but variations must be allowed in making calculations,

per Lineal Foot of

BRASS TUBING.___

Nos. 8 to 24, Brown & Sharp's Gauge.

add 5 per cent. to the Weights of Brass Tubing.

17	18	19	20	21	22	23	24	Gauge No.
3 6 4			1 3 2					Fractions of an Inch.
	.068	.062	.057					16
.11	.097	.088	.080					1/4
.14	.13	.114	.104	.094	.084			5
.17	.15	.14	.126	.114	.102	.092	.082	3/2
.20	.18	.17	.15	.135	.121	.108	.096	7 7
.24	.21	. 19	.17	.155	.139	.124	.111	1,6
.27	.24	.22	.20	.176	.156	.141	.125	9
.30	.27	.24	. 22	.196	.174	.157	.140	5%
.33	. 30	.27	.24	.22	.193	.173	.154	116
.37	. 33	.30	.26	.24	.211	.189	.169	19 /
.40	.36	.32	.29	.26	.230	.206	.183	1 3 1 6 7/2
.43	.39	.35	.31	.28	.248	.222	.198	7/8
.47	.42	.37	.33	.30	.267	.238	.212	7/8 15 16
.50	.45	.40	. 36	.32	.285			1
.57	.50	.45	.40	. 36	.321			11/8
.63	.56	.50	.45	.40	.358			11/4
.69	. 62	.55	.50	.44	.395			13/8
.76	. 68	.61	.54	.48	.43			11/2
.82	.74	.66	. 59					15%
.89	.79	.71	.63					13/4
.95	.85	.76	.68					1 1/8
1.02	.91	.81	.73					2
1.09	.97	.86	.77					21/8
1.16	1.03	.92	.82					$2\frac{1}{4}$
1.22	1.08	.97	.86					$2\frac{3}{8}$
1.28	1.14	1.02	.91					21/2
1.35	1.20	1.07	.96					25/8
1.41	1.26	1.12	1.00					23/4
1.48	1.32	1.17	1.05					27/8
1.54	1.38	1.23	1.09					3
1.62	1.43	1.28	1.14					31/8
1.68	1.49	1.33	1.19					31/4

expected in practice, and from 21/2 to 5 per cent. margin should be

Weight of Copper and Brass Wire.

DIAMETERS DETERMINED BY BROWN & SHARPE'S GAUGE.

No. of	Decim'l	Weigh	nt of Wire pe	er 1000 Linea	l Feet.
Gauge.	Equiv.	Wrought Iron.	Steel.	Copper	Brass.
0000 000 00 0	Inch. .46000 .40964 .36480 .32486	Lbs. 560.74 414.68 352.66 279.67	<i>Lbs.</i> 566.03 448.88 355.99 282.30	Lbs. 640.51 507.95 402.83 319.45	Lbs. 605.18 479.91 380.67 301.82
1	.28930	221.79	223.89	253,34	239.35
2	.25763	175.89	177.55	200.91	189.82
3	.22942	139.48	140.80	159.32	150.52
4	.20431	110.62	111.66	126.35	119.38
5	.18194	87.720	88.548	100.20	94.666
6	.16202	69.565	70.221	79.462	75,075
7	.14428	55.165	55.685	63.013	59,545
8	.12849	43.751	44.164	49.976	47,219
9	.11443	34.699	35.026	39.636	37,437
10	.10189	27.512	27.772	31.426	29,687
11	.090742	21.820	22.026	24.924	23.549
12	.080808	17.304	17.468	19.766	18.676
13	.071961	13.722	13.851	15.674	14.809
14	.064084	10.886	10.989	12.485	11.746
15	.057068	8.631	8.712	9.859	9.315
16	.050820	6.845	6.909	7.819	7.587
17	.045257	5.427	5.478	6.199	5.857
18	.040303	4.304	4.344	4.916	4.645
19	.035890	2.413	3.445	3.899	3.684
20	.031961	2.708	2.734	3.094	2.920
21	.028462	2.147	2.167	2.452	2,817
22	.025347	1.703	1.719	1.945	1,838
23	.022571	1.350	1.363	1.542	1,457
24	.020100	1.071	1.081	1.223	1,155
25	.017900	.8491	.8571	.9699	,9163
26	.01594	.6734	.6797	.7692	.7267
27	.014195	.5340	.5391	.6099	.5763
28	.012641	.4235	.4275	.4837	.4570
29	.011257	.3358	.3389	.3835	.3624
30	.010025	.2663	.2688	.3042	.2874
31	.008928	.2113	.2132	.2413	.2280
32	.007950	.1675	.1691	.1913	.1808
33	.007080	.1328	.1341	.1517	.1434
34	.006304	.1053	.1063	.1204	.1137
35	.005614	.08366	.08445	.0956	.0901
36 37 38 39 40	.005000 .004453 .003965 .003531 .003144	.06625 .05255 .04166 .03395 .02620	.06687 .05304 .04205 .03336 .02644	.0757 .06003 .04758 .03755 .02992	.0715 .0567 .0449 .0356
Specific	Gravity	7.7747	7.848	8.880	8.386 524.16
Weight	cu. ft.	485.874	490.45	554.988	

TABLE OF DIMENSIONS AND RESISTANCES OF PURE COPPER WIRE.*

Gauge No.	er,	ARE	Α.		p. gr. '8	LENGTH,	F	ESISTA	NCE AT	75° F.
American B. & S.	Diameter, Mills.	Circular Mils (d2) 1 Mil= .001 in.	Square in. (d2 x.7854).	Lbs, per 1,000 ft.	Lbs. per mile.	Feet per lb.	R Ohms per 1,000 ft.	Ohms per mile.	Feet per Ohm	Ohms per lb.
000	409.640 364.800	211600.00 167805.00 133079.40 105592,50 83694.20	131790. 104520.	402.09 319.04	2677.0 2123.0	1.56 1.97 2.49 3.13 3.95	.06186	.32664	16165. 12820. 10409.	.000076736 .00012039 .00019423 .00030772 .00048994
3 4 5	257,630 229,420 204,310 181,940 162,020	66373.00 52634.00 41742.00 33102.00 26250.50	52130, 41339, 32784, 25998, 20617,		839.68		.24869 .31361	1.3131	$4021.0 \\ 3188.7$.00078045 .0012406 .0019721 .0031361 .0049868
9	144.250 128.490 114.430 101.890 90.742	20816,00 16509.00 13594,00 10381.00 8234.00		49.88 39.56 31.37	332.11 263.37 208.88 165.63 137.37	15.90 20.05 25.28 31.38 40.20	.79281	$4.1860 \\ 5.2800$	1590.3 1261.3 1000.0	.0079294 .012608 .020042 .031380 .050682
12 13 14 15 16	71,961 64,084 57,068 50,820	6529,90 5178.40 4106.80 3256.7 2582.9	5128.6 4067.1 3146.9 2557.8 2028.6	15.65 12.41 9.84	104.18 82,632 65,525 51,956 41,237	63,91 80,59 101,63	2.0047 2.5908 3.1150	10.585 13.680 16.477		.31658
15 15 15 26 2	40.303 35.390 31.961	1252.4 1021.5	1608.6 1275.7 983.64 802.28 636.25	4.91 3.78 3.09	32.683 25.925 20.051 16.315 12.936	203.76 264.26 324.00	6,3911 8,2889 10,163	33,745 43,765 53,658	197,30 156,47 120,64 98,401 78,037	1,3023 2,1904 3,2926
2 2 2 2	3 22.571 4 20.100 5 17.900	509.45 404.01 320.40	400.12 317.31 251.64	1.54 1.22 :97	10.243 8.1312 6.4416 5.1216 4.0656	649.66	20.377 25.695 32.400	107.59 135.67 171.07	61.911 49.087 38.918 30.864 24.469	13.238 21.050 33,466
g		159.79 126.79 100.5	125.50 99.526 78.933	.48 .38 .30	3,2208 2,5344 2,0064 1,5840 1,2672	1642.55 2071.22 2611.82 3293.97 4152.22	64.966 81.921 103.30	343.02 432.54 545.39	12.207	134.56 213.96 340.25
	7.956 33 7.086 34 6.30 35 5.61 36 5.00	50.18 4 39.74 4 31.58	39.372 31.212 24.756	.15 .12	.7920 .6336 .5280	5236.66 6602.71 8328.30 10501.35 13238.83	207.08 261.29 329.35	1093.4 1379.8 1738.9	$ \begin{array}{c} 4.8290 \\ 3.8281 \\ 3.0363 \end{array} $	1367.3 2175.5 3458.5
	37 4.45 38 3.96 39 3.53 40 3.14	5 15.72 1 12.47 4 9.89	15.567 12.347 9.7939 7.7676	.05	.2640	16691.06 20854.65 26302.23 33175.94	660.37 832.48	3486.7 4395.5	1.5143 1.2012	13772. 21896.

^{*}Calculated on the basis of Dr. Matthiessen's standard, viz.: 1 mile of pure copper wire of 1-16 in. diameter equals 13,59 ohms at 15.5° C. or 59,9° Fahr. These tables are theoretically correct, but variations must be expected in practice.

Weight of Bare Copper Wire.

No.	One Thou	sand Feet.	One	Mile.
	B. & S.	B. W. G	B. & S.	B. W. G
0000	639.33	622,36	3375	3286
000	507.01	546.22	2677	2884
00	402.09	436,56	2123	2305
0	319.04	349.63	1684	1846
1	252.88	272.17	1335	1437
$\frac{2}{3}$	200.54	243,76	1058	1287
3	159.03	202.84	839	1071
4	126.12	171.21	665	904
5	100.01	146.40	528	773
6	79.32	124.43	418	657
7	62.90	97.92	332	547
8	49.88	82,39	263	435
9	39.56	66.29	200	350
10	31.37	54.36	166	287
11	24.88	43,56	131	230
12	19.73	35.98	104	190
13	15.65	27,27	83	144
14	12.41	20.83	65	110
15	9.84	15.72	52	83
16	7.81	12.88	41	68
17	6.19	10.18	33	5334
18	4.92	7.20	20	38
19	3.93	5.30	2034	28
20	3,09	3,60	1614	19 1/2
21	2.45	3.09	13	161/2
22	1.94	2.37	101/4	12 1/2
23	1.54	1.94	81/8	10 1/2
24	1.22	1.47	61/2	73/
25	.97	1.22	51/8	61/2
26	.77	. 95	4	5
27	.61	.75	31/4	4
28	.48	.61 1/2	21/	31/4
29	.38	.50	21/2	2 5/8
30	.30	.42	15/8	21/4

TABLES SHOWING NUMBER OF RIVETS AND BURS TO THE POUND.

BELT RIVETS ONLY,

Bu Onl	1½	1¼	11/8	1	7/8	3/4	5/8	9 16	1/2	716	3/8	16	1/4	No.
6	26	30	32	34	41	43	46		48					4
2 1	32	36	40	44	48	50	56	60	64					5
1 18	44	48	52	56	64	68	78	88	90	110	128			6
4 3	64	72	80	88	96	104	120	124	152	158	168	192	208	7
. 40		84	88	96	104	120	136	152	168	200	208	240	246	8
. 50				130	144	168	192	200	232	250	256	320	368	9
. 70				142	160	184	216	240	256	270	320	352	379	10
. 99						216	224	264	304	320	368	400	480	11
. 109				192	208	232	272	304	336	368	408	432	496	12
. 10'					288	320	386	416	432	480	528	640	800	13
. 20					384	480	544		608	704	768	928	1024	14
. 33						576	640		736		983	1024	1248	15

BRASS JACKET RIVETS....No.. 7, 4 No. 8, 36 14 188 312 24

HOSE RIVETS AND BURS.

									Burs.
7	164	128	133	128	120	113	102	92	368
8	209	173	169	152	145	100	110	100	417

These tables are theoretically correct, but variations must be expected in practice.

TABLES SHOWING NUMBER OF RIVETS AND BURS TO THE POUND.

OVAL HEAD OR TRUNK RIVETS AND BURS.

LENGTH MEASURED UNDER THE HEAD.

No.	1/4	5 16	3/8	7 16	1/2	9 16	5/8	3/4	7/8	1	11/8	11/4	Burs.
9	317	270	254	220	206	193	189	165	138	116	107	101	600

COPPER BRAZIER'S RIVETS.

OVAL HEAD.

LENGTH MEASURED UNDER THE HEAD.

	148	66	2 49 17 64 1/2	37	28 5 16 11 16	5 23 23 264 3/4	19	7 13 7 16 15	8	9 6 5/8 11/4	10 5 21 11/4
--	-----	----	----------------------------	----	---------------------------	-----------------------------	----	--------------------------	---	-----------------------	-----------------------

FLAT HEAD COPPER RIVETS.

LENGTH MEASURED UNDER THE HEAD

LENGTH MEASURED UNDER THE HEAD.		
1-4 in. Diameter of Shank	1½ in. 30	long.
5-16 in. Diameter of Shank x 34 1 114 No. to lb	1½ 17	6.6
3-8 in. Diameter of Shankx 1 1¼ 1¾ 1½ No. to lb	2 10	44
1=2 in. Diameter of Shankx 1 1½ 1¾ 1¾ 1½ No. to 1b 9 8 7 6	2 5	4.6

TABLE SHOWING NUMBER OF STAR BRAND BRASS ESCUTCHEON PINS TO THE POUND.

LENGTH MEASURED UNDER THE HEAD.

No.	1/4	3/8	1/2	5/8	3/4	7/8	1	11/4	1½	13/4	2
12		720	650	460	416	400	336	272	212	192	170
13 14	1 075	1,120 $1,312$	948	672		480 692	400	380	320	229	220
15		1,820		$950 \\ 1.152$		888	600 720	432 576	378 580	320 432	272 400
16		2,240		1,460	1,275	1,130	980	720	592	578	464
17		2,700		1,812		1,185			800	640	
18 19		3,175 $5,140$		2,450 $3,565$,	, ,	960		
20		8,419									

WEIGHTS OF STAIR PLATES, STOCK SIZES.

,)	5 x 18	5 x 20	6 x 18	6 x 20
Zinc	13%	1 7-16	1 9-16	15% lb.
Brass	11/2	15%	17/8	2
These tables are	theoretically	correct, but	variations	must be ex-

pected in practice.

TABLE SHOWING NUMBER OF

COPPER AND YELLOW METAL NAILS

To the Pound and Lengths of Various Sizes.

COPPER. REGULAR CUT.

Size.	Length.	Number to Pound.
2d. 3d. 4d. 5d. 6d. 7d. 8d. 9d. 10d. 12d. 12d. 20d. 30d. 40d. 50d.	34 in. 78 " 1 " 1 " 1 " 1 " 2 " 2 " 3 " 3 " 3 " 4 " 5 " 6 "	About. 660 566 466 285 200 165 97 77 69 55 44 47 38 26 20 17 13 10

COPPER, WIRE.

Size.	Lengt Gau		Number to Pound.
2d. 3d. 4d. 5d. 6d. 7d. 8d. 9d. 10d. 12d. 16d. 20d. 30d. 40d. 50d.	In. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	No. 15 14 13 12 12 11 10 10 9 8 6 5 4 3 2	About 765 522 274 216 170 131 91 73 63 50 40 26 20 15 12 8
			l.

To determine the number of Brass Nails to the pound, add 5 per cent. to number of Copper Nails.

Cut Copper Slating Nails

in. about 190 to the pound,

Cut Yellow Metal Slating Nails.

1½ in. about 154 to the pound.

Copper Wire Slating Nails

									To the	
	7/8	in.	No.	12	Gau	ge.			about 303	
1		4.6	6.6	13	6.6	,			. 270	
ì	1/4			11					196	
1	1/2	6.6	4.4	10	+ 6				134	
	1/4		6.6	12	- 6				" 231	
i	1/6		* *	12	4.6		ì	ì	. 210	

Approximate Weight of Chain per Box of 12 Yards (Box Included).

JACK CHAIN.

	SINGLE.		Dou	BLE
No.	Iron.	Brass.	Iron.	Brass,
5	Lbs. 8½ to 9¼	Lbs.	Lbs.	Lbs.
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	714 " 884 714 " 884 4 " 534 4 " 44/2 31/4 " 23/4 21/4 " 23/4 11/2 " 13/4 1 " 13/6 1 " 15/6" " 16/6 1 " 6 " 6 " 6 " 6 " 6 " 6 " 6 " 6 " 6 "	71/2 to 81/2 7 " 8 41/2 " 51/2 31/2 " 41/2 31/2 " 21/2 23/4 " 31/4 11/2 " 1 1/2 34 " 11/4 11/2 " 1 1/3 34 " 11/4 11/2 " 1 1/3 34 " 11/4 11/2 " 1 1/3 34 " 11/4 11/3 " 1 1/5 36 " 1 1/6 36 " 1 1/6 37 " 1 1/6 38 " 1 1/6	2 to 234 134 ·· 214 114 ·· 158 78 ·· 118 34 ·· 1 138 ·· 156 110 ·· 116 38 ·· 12	2½ to 25/1½ 11/2 11/2 11/2 11/2 11/2 11/2 11/2 1

No.	PLUMBERS' CHAINS.	SAFETY CHAINS.
	Brass.	Brass.
000		9 to 10 ounces
00	12 to 13 ounces.	12 '' 13 ''
0	13 " 15 "	13 '' 14 ''
1	23 " 25 "	22 . 24
2	27 " 30 "	28 " 30 "
3		85 " 87 "

Measurement Capacity of

CHACE'S PATTERN OILERS.

No. 00 holds ¼ of a gill.

" 0 " ½ "
" 1 " ¾ "

" 1½ " 1 gill.

" 2 " 1¾ gills.

" 3 " 2 " or ½ pint.

" 4 " 3 " "½ " and 1 gill.

" 5 " 4 " " 1 "
" 6 " 4¾ " " 1 " and ¾ of a gill.

COPPER BOTTOMS.

Approximate Weights Per Gross.

14 Ounzes to Square Foot.

	Round	Oval	Round	Oval
	Pits.	Pits.	Flats.	Flats
	Lbs.	Lbs.	Lbs.	Lbs.
6	inch521/4	149	48 1/2	145
7	"	21	62	155
8	"83	227 1/2	72	203
9	"98	263	86 1/2	241

To ascertain the weight of 12 oz. Pits and Flats, deduct $\frac{1}{2}$, or $14\frac{2}{7}$ % from above figures.

For weight of 10 oz. Pits and Flats, deduct $\frac{2}{7}$, or $28\frac{4}{7}$ %.

These weights are approximately correct, but variations must be expected in practice.

Measures and Weights of Great Britain.

The measures of length and the weights are, practically, the same as those in use in the United States. The English ton is 2,240 lbs, avoirdupois, the same as the long ton, or shipping ton of the United States. The English hundredweight is 112 lbs, avoirdupois, the same as the long hundredweight of the United States. The metre has been legalized at 39.37079 inches, but the length of 39,370432 inches, as adopted by France, Germany, Belgium, and Russia, is frequently used.

The Imperial gallon, the basis of the system of capacity, involves an error of about 1 part in 1,836; 10 lbs. of water=277.123 cubic inches.

MEASURES OF CAPACITY.

Names.	Lbs. of Water.	Cubic Inches.	Litres.	United States Equivalents.
4 gills =1 pint 2 pints =1 quart 2 quarts =1 pottle	1.35 2.5 5	34.66 69.32 138.64	1.13586	1,20082 liquid pints. 1,20032 " quarts. 2,40064 "
2 pottles =1 gallon 2 gallons =1 peck 4 pecks =1 bushel	20) £	277.27 554.55 2218.19	9.08692 36.34766	
4 bushels=1 coomb 2 coombs=1 quarter.			145.39062 290.7813	

DOMESTIC WEIGHTS AND MEASURES.

Apothecaries' Weight: 20 grains-1 scruple; 3 scruples-1

dram; 8 drams—1 ounce; 12 ounces—1 pound.

Avoirdupois Weight (short ton); 273½ grains—1 dram; 16 drams
—1 ounce; 16 ounces—1 pound; 25 pounds—1 quarter; 4 quarters—
1 cwt.; 20 cwt.—1 ton.

Avoirdupois Weight (long ton): $27\frac{1}{3}\frac{1}{2}$ grains -1 dram; 16 drams -1 ounce; 16 ounces -1 pound; 112 pounds -1 cwt.; 20 cwt.—1 ton.

Troy Weight: 24 grains—1 pennyweight; 20 pennyweights—1

ounce; 12 ounces-1 pound.

Circular Measure: 60 seconds - 1 minute; 60 minutes - 1 degree; 30 degrees - 1 sign; 12 signs - 1 circle.

tubic Measure: 1,728 cubic inches—1 cubic foot; 27 cubic feet—1 cubic yard.

Dry Measure: 2 pints—1 quart; 8 quarts--1 peck; 4 pecks—1 bushel.

Liquid Mensure: 4 gills—1 pint; 2 pints—1 quart; 4 quarts—1 gallon; 31½ gallons—1 barrel; 2 barrels—1 hogshead.
Long Mensure: 12 inches—1 foot; 3 feet—1 yard; 5½ yards—

Long Measure: 12 inches—I foot; 3 feet—I yard; 5½ yards— 7 od or pole; 40 rods—I furlong; 8 furlongs—I statute mile; 3 miles—I league.

Mariner's Measure: 6 feet—1 fathom; 120 fathoms—1 cable length; 7½ cable lengths—1 mile; 5,280 feet—1 statute mile; 6,085 feet—1 natival mile; 6,085

feet—I nautical mile: 144 square inches—I square foot; 9 square feet—I square yard; 30¼ square yards—I square rod or perch;

do square rods—I rods: 1 acquare 1 square mile; 40 square rods—I rod; 4 rods—I acre; 640 acres—I square mile; 36 square miles (6 miles square)—I township.

Time Measure: 60 seconds—I minute; 60 minutes—I hour;

24 hours—1 day; 7 days—1 week; 365 days—1 year; 366—1 leap year.

TABLE OF POUND EQUIVALENTS IN KILOGRAMS.

							,			,	
Lbs.		rams	Lbs.		Cilo- rams	Lbs.		Kilo- rams	Lbs.		Kilo- grams
1		. 4535	- 26	11	.7910	51	23	.1285	76	34	. 4660
2		.9070	27		.2445		23	.5820		34	.9195
3	1	.3605	28		6980		24	.0355		35	.3730
4	1	.8140		13	.1515		24	.4890		35	.8265
5	2	.2675		13	6050	55	24	.9425	80	36	.28
6	2	.7210	31	14	.0585	56	25	.3960	81	36	.7335
17	3	.1745	32	14	.5120	57	25	.8495	82	37	.1870
8	3	. 6280	33	14	.9655	58	26	.3030	83	37	.6405
9	4	.0815	34	15	.4190	59	26	.7565	84	38	.0940
10	4	.5350	35	15	.8725	60	27	.21	85	38	.5475
11	4	.9885	36	16	.3260	61	27	. 6635	86	39	.0010
12	5	.4420	37	16	.7795	62	28	.1170	87	39	.4545
13	5	.8955	38	17	.2330	63	28	.5705	88	39	.9080
14	6	.3490	38	17	.6865	64	29	.0240	89	40	.3615
15	6	.8025	40	18	.14	65	29	.4775	90	40	.8150
16	7	. 2560	41	18	.5935	66	29	.9310	91	41	.2685
17	7	.7095	42	19	.0470	67	30	.3845	92	41	.7220
18	8	.1630	48	19	.5005	68	30	.8380	93	42	.1755
19	8	.6165	44	19	.9540	65	31	.2915	94	42	.6290
20	9	.07	45	20	.4075	70	31	.7450	95	43	.0825
21	9	.5235	46	20	.8610	71	32	.1985	96	43	.5360
22	9	.9770	4	21	.3145	76	32	.6520	97	43	.9895
23	10	.4305	48	3 21	.7680	76	33	.1055	88	3 44	.4430
24	10	.8840	4	22	.2215	74	133	.5590	99	44	.8965
25	11	. 3375	50	22	.6750	7	34	.0125	100	45	.35

METRIC SYSTEM OF WEIGHTS AND MEASURES.

The Metric System was legalized in the United States on July 28, 1866, when Congress enacted as follows:

"The tables in the schedule hereto annexed shall be recognized in the construction of contracts, and in all legal proceedings, as establishing, in terms of the weights and measures now in use in the United States, the equivalents of the weights and measures expressed therein in terms of the metric system, and the tables may lawfully be used for computing, determining, and expressing in customary weights and measures the weights and measures of the metric system."

The following are the tables annexed to the above

MEASURES OF LENGTH.

Metric Denominations and Values	Equivalents in Denominations in Use
Myriametre 10,000 metre Kilometre 1,000 metre Hectometre 100 metre Dekametre 10 metre 11 metre 11 metre 120 of a metre 1100 of a metre 1100 of a metre Millimetre 1-100 of a metre Millimetre 1-1000 of a metre	6. 0.62137 mile, or 3,280 ft. 10 ins. 6. 328 feet 1 inch. 6. 393.7 inches. 7. 39.37 inches. 8. 937 inches.

MEASURES OF SURFACE.

Metric Denominations and Values.	Equivalents in Denominations in Use.
Hectare10,000 square metres Are100 square metres. Centare1 square metre.	2.471 acres. 119.6 square yards. 1,550 square inches.

Multiply the circumference by half the radius and the product will be the area; or, multiply the square of the diameter by .7854 and the product will be the area. RULES TO FIND THE AREA OF CIRCLES.

AREA OF CIRCLES (IN SQUARE FEET).

	4	1 inch	9 inches	3 inches.	4 inches.	s. 5 inches.	-	6 inches. 7	7 inches.	8 inches.	s. a menes.		TOTTICETES.	THITCHES.	1001
Jameter, Ft.	U IIICII.	7	1 (1)	1 99	-	1 5	28	1	1.97	3/		41		cs.	80
1	4087.	0	D 00	- 6		. 4	20 05	0	5 24	ıc		94	6.30	9	89
2	3.14	3.41	20.00	06.0	+0	0 1	17 0		10 08	10.56	11	04	11.54	12	05
3	7.07	141		0				200	16 50	1		50	200		00
4	12.58	13.10		14.	14.	10		00.	10.00	- 4		\$ £		_	3 6
	10 64	90 39		21.	22		_	97.	24.48				50.73		43
	10.01	90.00		330	33		34 33	18	34,04	34.9	1 35.	28			57
	20.02	90.41		41.	49.		20 44	00	45.17	46.	16 47.	17	48.19		22
	53.43	53.41		4.07	1 10	1 10	34 56	10	57 86	000		13			44
	50.27	01.62		000	9	60	24 70	o or	79.13	73					24
	63.62	04.30	00.00		0 0 0	200	98 66	86.59	87.97	86	98		92.17	93	9
	18.01	00.00		000	100	100	37 103	27.	05 38	106	_	431	86.60		53
1	90.03	30.40		117	110	191	09 1 99	72	24.36	126	_	.68		131	0.4
	113.10	114.01	150 16	197	130	171	38 143	141	144 91	146		49			Ξ
	132.73	154.44		150	161	169	94165	131		168		200			.76
4	153.94	100.78	٠.	100	101	186	67 199	601	190 73	199		8			
5	176.72	20.87.1		100	900	911	67 912	0000		218		35			7
6	201.06			201	000	0000		3 2		576	18 947	45		252	1.
7			٠.	255	200	000		90	+	978	27.976	661	78 58		C
18	254.47	256.83		201.03	000	56 506		64			308	36 3	08.94	311	55
9	283.53	280.00	200.000	0.162	000	79 897	30 33(0.04	339 77	335.4	5 338	163	40.88	3 3 4 3	.65
00	21/16	Y C	2 2	1				֡							

These weights are theoretically correct, but variations must be expected in practice.

TABLE OF DIAMETERS, CIRCUMFERENCES, AND AREAS OF CIRCLES.

And the Contents in Gallons at One Foot in Depth.

Diam.	Circ. in.	Area in.	Gallons.	Diam.	Circ. in.	Area in.	Gallons
1 in.	3.1416	.7854	.04084	6 1/2	20.420	33.183	1.72559
1/8	3.5343	.9940	.05169	5/8	20.813	34.471	1.79249
1/8	3.9270	1.2271	.06380	30	21.205		
	4.3197	1.4848		24		35.784	1.86077
3/8 1/2			.07717	1/8	21.598	37.122	1.93034
	4.7124	1.7671	.09188	7 in.	21.991	38.484	2.00117
5/8 3/4	5.1051	2.0739	.10784	1/8	22.383	39.871	2.07329
3/4	5.4978	2.4052	.12506	1/4	22.776	41.282	2.1466
7/6	5.8905	2.7611	.14357	82	23.169	42.718	2.2213
2 in.	6.2832	3.1416	.16333	78			
1/				2/2	23.562	44.178	2.2972
1/8	6.6759	3.5465	.18439	3/8 1/2 5/8	23.954	45.663	2.3744
1/4 8/8 1/2	7.0686	3.9760	.20675	3/4	24.347	47.173	2.4529
3/8	7.4613	4,4302	.23036	1/2	24.740	48.707	2.5327
1/6	7.8540	4.9087	.25522	8 in.	25.132	50.265	2.6137
58	8.2467	5.4119	.28142	1/	25.515		
32				1/8 1/4		51.848	2.6960
	8.6394	5.9395	.30883		25.918	53.456	2.7797
7/8	9.0321	6.4918	.33753	3/8 1/2	26.310	55.088	2.8645
3 in.	9.4248	7.0686	.36754	1/2	26.703	56.745	2.9507
1,6	9.8175	7.6699	.39879	5/8	27.096	58.426	3.0381
1/8 1/4	10.210	8.2957		38			
3/8			.43134	24	27.489	60.132	3.1268
	10.602	8.9462	. 46519	7/8	27.881	61.862	3.2168
1/5 5/8 3/4	10.995	9.6211	.50029	9 in.	28.274	63.617	3.3040
9/8	11.388	10.320	.53664	1/8	28.667	65.396	3.4005
3/4	11.781	11.044	.57429	17	29.059	67.200	3.4944
72	12.173	11.793	.61324	87	29.452	69.029	
4 in.	12.566	12.566		3/8			3.5895
		-	. 65343		29.845	70.882	3.6858
1/8 1/4 3/8 1/2 5/8	12.959	13.364	.69493	5/8	30.237	72.759	3.7834
1/4	13.351	14.186	.73767	3/4	30.630	74.662	3.8824
3,6	13.744	15.033	.78172	77	31.023	76.588	3.9825
12	14.137	15.904	.82701	7/8 10 in.			
63				10 111.	31.416	78.540	4.0840
	14.529	16.800	.87360	1/8	31.808	80.515	4.1867
34	14.922	17.720	. 92144	1/4	32.201	82.516	4.2908
78	15,315	18.665	.97058	3/8	32.594	84.540	4.3960
in.	15.708	19.635	1.02102	1%	32.986	86.590	4.5026
16	16.100	20.629	1.07271	69	33.379		
1/8 1/4		01.049		5%		88.664	4.6105
	16.493	21.647	1.12564	34	33.772	90.762	4.7196
3/8/1/8/3/1	16.886	22.690	1.17988	11 in.	34.164	92.885	4.8284
1/2	17.278	23.758	1.23542	11 in.	34.557	95.033	4.9417
56	17.671	24.850	1.29220	14	34.950	97.205	
3%	18.064	25.967	1.35028	1/8 1/4			5.0546
53				74,	35.343	99.402	5.1689
78_	18.457	27.108	1.40962	3/8	35.735	101.623	5.2843
in.	18.849	28.274	1.47025	1/2	36.128	103.869	5.4011
1/8		29.464	1.53213	5/8 3/4		106.139	5.5192
1/1	19.635	30.679	1.59531	37	36.913	108.434	
83			1.65979	7/4		108.434	5.63857

These tables are theoretically correct, but variations must be *p.cted in practice.

TABLE OF DIAMETERS, CIRCUMFERENCES, AND AREAS OF CIRCLES.

And the Contents in Gallons at One Foot in Depth. AREA IN FEET.

Diam.		Area in ft.	Gallons.	Diam	. Circ.	Area in ft.	Gallons.
Ft. ln. 1 1 1 1 2 1 3 1 4	Ft. In. 3 15/8 3 43/8 3 8 3 11 4 21/8	.7854 .9217 1.0690 1.2271 1.3962	5.8735 6.8928 7.9944 9.1766 10.4413	4 8 4 9 4 10 4 11 5	Ft. In. 14 778 14 11 15 21/8 15 51/4 15 81/2	17.7205	1ft. depth 127.9119 132.5209 137.2100 142.0589 146.8384
1 5 1 6 1 7 1 8 1 9	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1.5761 1.7671 1.9689 2.1816 2.4052	11.7866 13.2150 14.7241 16.3148 17.9870	5 1 5 2 5 3 5 4 5 5	15 115/8 16 23/4 16 53/4 16 9 17 01/8	20.2947 20.9656 21.6475 22.3400 23.0437	151.7718 156.789 161.8886 167.067- 172.3300
1 10 1 11 2 2 1 2 2	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2.6398 2.8852 3.1416 3.4087 3.6869	19.7414 21.4830 23.4940 25.4916 27.5720	5 6 5 7 5 8 5 9 5 10	17 3 ¹ / ₄ 17 6 ³ / ₈ 17 9 ⁵ / ₈ 18 0 ³ / ₄ 18 3 ⁷ / ₈	23.7583 24.4835 25.2199 25.9672 26.7251	177.6740 183.0973 188.6043 194.1930 199.8610
2 3 2 4 2 5 2 6 2 7	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3.9760 4.2760 4.5869 4.9087 5.2413	29.7340 32.6976 34.3027 36.7092 39.1964	5 11 6 6 3 6 6 6 9	18 71/8 18 101/8 19 71/2 20 47/8 21 23/8	27.4943 28.2744 30.6796 33.1831 35.7847	205.6133 211.4473 229.4343 248.1564 267.6125
2 8 2 9 2 10 2 11 3	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5.5850 5.9395 6.3049 6.6813 7.0686	41.7668 44.4179 47.1505 49.9654 52.8618	7 7 3 7 6 7 9	21 117/8 22 91/4 23 63/4 24 41/8 25 11/2	38.4846 41.2825 44.1787 47.1730 50.2656	287.8230 308.7270 330.3859 352.7668 375.9062
3 1 3 2 3 3 3 4 3 5	9 8½ 9 113% 10 2½ 10 55% 10 8¾	7.4666 7.8757 8.2957 8.7265 9.1683	55.8382 58.8976 62.0386 65.2602 68.5193	8 3 8 6 8 9 9	25 11 26 83% 27 534 28 314 29 058	53.4562 56.7451 60.1321 63.6174 67.2007	399.7668 424.3625 449.2118 475.7563 502.5536
3 6 3 7 3 8 3 9 3 10	10 1178 11 3 11 618 11 938 12 01/2	9.6211 10.0846 10.5591 11.0446 11.5409	73.1504 75.4166 78.9652 82.5959 86.3074	9 6 9 9 10 10 3 10 6	29 10½ 30 7½ 31 5 32 23% 32 11¾	70.8823 74.6620 78.5400 82.5160 86.5903	530.0861 558.3522 587.3534 617.0876 647.5568
4 3	12 35/8 12 63/4 12 97/8 13 1 13 41/8	12.0481 12.5664 13.0952 13.6353 14.1862	90.1004 93.9754 97.9310 101.9701 103.0300	10 9 11 1 11 3 11 6 11 9	33 9½ 34 65% 35 4½ 36 1½	90.7627 95.0334 99.4021 103.8691 108.4342	678.2797 710.6977 743.3686 776.7746 810.9143
4 5 4 6	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	14.7479 15.3206 15.9043 16.4986	110.2907 114.5735 118.9386 123.3830	12 12 3 12 6 12 9	37 83/8 38 53/4 39 31/4	113.0976 117.8590 122.7187 127.6765	848.1890 881.3966 917.7395 954.8159

These tables are theoretically correct, but variations must be expected in practice.

RULES RELATIVE TO THE CIRCLE.

To Find Circumference

Multiply diameter by 3.1416. Or divide " 0.3183.

To Find Diameter-

Multiply circumference by 0.3183. Or divide 3.1416.

To Find Radius-

Multiply circumference by 0.15915. Or divide 6,28318.

To Find Side of an Inscribed Square-

Multiply diameter by 0 7071. Or multiply circumference by 0.2251. "divide" 4.4428.

To Find Side of an Equal Square-

Multiply diameter by 0.8862. Or divide 1.1284. " multiply circumference by 0.2821. " divide 3.545.

SOUARE-

A side multiplied by 1.1442 equal diameter of its circumscribing circle.

A side multiplied by 4.443 equal circumference of its circumscribing circle.

A side multiplied by 1.128 equal diameter of an equal circle, A side multiplied by 3.547 equal circumference of an equal circle. Square inches multiplied by 1.273 equal circle inches of an equal, circle

To Find the Area of a Circle-

Multiply circumference by one-quarter of the diameter. Or "the square of diameter by 0.7854, "" "circumference ".07958. "3.1416.

To Find the Surface of a Sphere or Clobe-

Multiply the diameter by the circumference.
Or "square of diameter by 3.1416.
"four times the square of radius 3.1416.

To Find the Weight of Brass and Copper Sheets, Rods

Ascertain the number of cubic inches in piece and multiply same by weight per cubic inch.

Brass, 0.2972. Copper, 0.3212.

Or multiply the length by the breadth (in feet) and product by weight in pounds per square foot.

U.T. HUNGERFORD BRASS & COPPER CO.



Telegraphic Cipher Code.

Cable Address: UTERFORD, NEW YORK. THIS Code enables our customers to express their orders clearly, as it covers every technical point, thereby obviating the necessity of our writing or telegraphing for more explicit details.

Experience has demonstrated that liability to *errors* in telegrams containing *cipher* words is largely diminished by having same *typewritten*. For ready reference to telegrams sent in cipher please note that code words for following lines of goods commence with a different letter of the alphabet, viz.:

Useful Phrases	Letter	G
Sheet Copper	Letter	C
Brazed Brass and Copper Tubing		
Brass in Rolls and Sheets		
Brass and Copper Wire	Letter	В
Brass and Copper Rod		
Yellow Metal and Tobin Bronze Rod		
Seamless Brass and Copper Tube	Letter	S
Copper Rivets and Burs	Letter	R
Copper and Yellow Metal Nails	Detter	16

NOTICE.

If immediate shipments are required care should be taken to specify Sizes Carried in Stock as outlined on previous pages; otherwise goods will have to be made to order, necessitating some delay.

USEFUL PHRASES.

Wire price and how soon you can ship	. Gate.
Mail price and how soon you can ship	. Gaily.
If you have in stock, ship immediately by first freight at your best price	. Grand.
If you have in stock, ship immediately by express at your best price.	. Great.
Wire earliest date you can ship	GIFT.
Provided you can manufacture and ship by freight within, enter following order at your best price	e Giganti c
Provided you can manufacture and ship by express within, enter following order at your best price	e Girdle.
We have the goods inquired for in stock and can ship immediately, if unsold on receipt of your order. Price will be.	. Glance.
Our stock of goods inquired for amounts to— balance we can ship from Mill in———shall we proceed with order on above basis?	. Gleam.
We have no stock of the size of goods inquired for, but can promise to ship from Mill in	. GLIMPSE.
Nearest size we have in stock to your requirements is shall we ship? It will take or possibly ten days, to get from Mill exactly what you require.	GLITTER.
When will you ship order dated	. Govern.

SHEET COPPER.

Sheets Soft Copper, Tinned one side Cambred Cambred Copper, Tinned one side Cambred Cambred Cambred Copper, Tinned one side Cambred St.	For Example - One hundred sheets Cold Rolled and Polished Copper, tinned one side, 30 x 60, 16 oz. to square
---	--

USE IN ORDERING SPECIAL SIZES. One hundred Camera, Cage, sixteen Canvass. FOR noot-would be expressed by:

CANDIDATE CANDOR CANKER CANOPY Cold Rolled Copper Circlesfeet diameter Sheets Soft Copper.....feet wide byfeet long Circles... inches diameter....Soft Copper Circles.... feet diameter,... Copper Copper Cold RolledSoft

The first numeral will indicate the number of sheets, the second the width, the third the length, and the fourth they Example: - Eight Soft Copper Circles seventy inches diameter, ten pounds to the square foot, and two sheets Cold Rolled Copper three feet wide by nine feet long, six pounds to the square foot-would be expressed by: "Bight seventy Candidate ten Canary two three nine Carbonic six Canary." Sheets Cold Rolled Copper......feet wide by...... feet long...... the weight per square foot or gauge number.

Sheets Cold Rolled Copper ... inches wide by ... inches long ... CANTHER

Copper Wire Slating Nails.

.....LBS. IN KEGS OF 100 LBS. EACH SIZE.

7/8 in.	long,	No.	12	Stubs'	Gauge	Robin
1	4.6	No.	12	6.6	4.6	Rofe
11/4	6.6	No.	11	6.6	4.4	Roster
11/4	4.6	No.	12	6.6	6.6	Rotary
11/2	4.4	No.	10	6.6	6 1	Rough
11/2	4.4	No.	12	4	6.6	ROYAL

Cut Copper and Yellow Metal Slating Nails.

.....LBS. IN KEGS OF 100 LBS. EACH SIZE.

1¼ in. or 3d CopperRudder	
1½ in. or 4d CopperRuffle	
114 in. or 3d Yellow MetalRuler	
1½ in, or 4d Yellow MetalRUMBLE	

For sizes carried in Stock see pages 79, 158 to 164.

FOR EXAMPLE: 500 lbs. % in. No. 12 S. G. Copper Wire Nails, would be expressed by "Five Hundred Robin."

And: 300 lbs. 1¼ in. or 3d Copper Cut Slating Nails, would be expressed by "Three Hundred Rudder."

278 U. T. HUNGERFORD BRASS AND COPPER CO.
The first numeral will indicate the number of pounds, lengths or sheets, the second numeral will
indicate the thickness by gauge number or fraction
of inch, and the third numeral the width in inches
when width is not indicated by code word.
For Example:—Two hundred pounds of Sof Sheet Brass, 6 inches wide—No. 21 B. & S. Gauge
would be expressed by: "Two hundred, twenty-one
Baby."
SHEET BRASS.
SOFT,, IN ROLLS. All B. & S. Gauge.
Lbs., 6 inches wide, No.——BABY
Lbs., 8 inches wide, No.—— BABYHOOD
Lbs., 10 inches wide, No BACKBONE
Lbs., 12 inches wide, No.—— BACKBITE
Lbs., 14 inches wide, No.——BACKWARI
For Sizes carried in Stock, see page 21.
HALF HARD BRASS.
IN SHEETS 24 x 48 AND 30 x 60 INCHES.
Sheets NoB. & S. Gauge
24 x 48 BADGE
24 x 48
30 x 60 BALANCE
30 x 60
HALF HARD BRASS.
IN SHEETS 72 INCHES LONG.
Sheets——inches wideNo.
B. & S. GaugeBARD
For Sizes carried in Stock, see page 20.
HALF HARD HOOP BRASS IN ROLLS.
Lbs.——inches wideNo.
B. & S. Gauge BADINAGE
B. & S. Gauge BADINAGE For Sizes carried in Stock, see page 23.
HALF HARD SHEET BRASS IN ROLLS.
Lbs., 6 inches wide, No. — BANG Lps., 8 inches wide, No. — BANKER Lbs., 10 inches wide, No. — BARBER
Lps., 8 inches wide, No.—BANKER
Lbs., 10 inches wide, No.——BARBER
Lbs., 12 inches wide, No. BARGE Lbs., 14 inches wide, No. BARLEY
Lbs., 14 inches wide, No.—BARLEY
For Thicknesses carried in Stock, see page 22.
HALF HARD SAWED BRASS.
Lengthsinches wide by
inch thick BLOCK
For Sizes carried in Stock, see page 23.
HARD DRAWN RECTANGULAR COPPER BARS.
Lengthsinches wide by
inch thick

.....BRIDE

HALF HARD SIGN BRASS, No. 15 B. & S. Gauge. Only one Thickness carried in Stock in Lengths of about 12 to 14 feet. Sheets.....BLOOM For Widths carried in Stock, see page 24, SPRING SHEET BRASS IN ROLLS. Only one Width (8 inches) carried in Stock. .. Lbs., 8 inches wide, No. - ... BALCONY For Thicknesses carried in Stock, see page 21. YELLOW METAL SHEATHING. SHEETS 14 x 48 INCHES. Sheets . . ounces sq. ft Basting For Sizes carried in Stock, see page 76. BRASS AND COPPER WIRE IN BUNDLES OF ABOUT 25 POUNDS EACH. All Wire carried in Stock to No. 21 inclusivé, is by Stubs' Gauge. Finer than No. 21 to No. 36, is by London Gauge All orders will be executed accordingly.Lbs. Soft Brass Wire, No.——...BAFFLERLbs. Hard Brass Wire, No.——...BAGATELLELbs. Spring Brass Wire, No. ____. BAGMAN LDS. Spring Brass Wire, No.——. BAGMAN LDS. Soft Copper Wire, No.——. BAGPIPE If wanted on one pound Spools, add the word "Spools." The first numeral will indicate the number of pounds, and the second numeral will indicate the gauge number. For Sizes carried in Stock, see page 29. For Example:—Five hundred pounds Spring Brass Wire, No. 14 Stubs' Gauge, and two hundred pounds Soft Copper Wire, No. 22 London Gauge, would be expressed by: "Five hundred, fourteen, Bagman, two hundred, Twenty-two, Bagpipe." BRASS, COPPER, YELLOW METAL AND TOBIN BRONZE ROD. HARD DRAWN, IN LENGTHS ABOUT 10 FEET LONG. Lengths Round Brass---.... inch---. BAILIFF Lengths Round Copper——... BATTLE Lengths Round Yellow Metal——

If Hexagon Rods are wanted add the word "Square," If Hexagon Rods are wanted add the word "Hexagon." For Example:—Fifty Lengths Hard Round Brass Rods, 1/4 inch diameter. in lengths about 10 feet long, would be expressed by: "Fifty, Half, Bailiff."

SEAMLESS BRASS AND COPPER TUBE.

HARD DRAWN.

Stubs' Gauge, 12 feet long.....SEARCH. - Stubs' Gauge, random lengths.....SEASON. -- Inches Inside Diameter, No. -- Stubs' Gauge, random lengths......SECEDE. Inches Outside Diameter, No. ---- Stubs' Gauge, 12 feet long......SEAL. For sizes carried in stock: Brass, see page 97; Copper, 102 to 104. - Inches Outside Diameter, No. -Inches Inside Diameter, No. -.....LengthsLengths Lengths ... Lengths

SEAMLESS COPPER TUBING.

..........Lengths —— Inches Inside Diameter, No. —— Stubs' Gauge...... For Copper sizes carried in stock see page 104. 20 FOOT LENGTHS.

ANNEALED.

The first numeral will indicate the number ofSALMON.SALTED.SALINE. --- Stubs' Gauge, random lengths - Stubs' Gauge, 12 feet long.....Lengths —— Inches Outside Diameter, No. —— Stubs' Gauge, random lengths. Add words "Brass" or "Copper" to indicate kind of Tube wanted. - Inches Inside Diameter, No. -— Inches Inside Diameter, No. — - Lengths -......Lengths -.....Lengths

Special lengths would be indicated by a fourth numeral, using random length code word. lengths, the second the diameter, and the third the gauge number.

For Example: -Twenty-five lengths Hard Drawn Seamless Copper Tubing, 3 inches outside diameter, No. 14 Stubs' Gauge, in 15 foot lengths, would be expressed by: "Twenty-five, three, fourteen, Season, fifteen feet, Copper,"

SEAMLESS BRASS AND COPPER TUBE. IRON PIPE SIZES.

					_
Lengths Regular Temper — Inches, Iron Pipe Size, 12 feet long	Lengths Regular Temper — Inches, Iron Pipe Size, random lengths	Lengths Annealed —— Inches, Iron Pipe Size, 12 feet long	Lengths Annealed —— Inches, Iron Pipe Size, random lengths	Add words "Brass" or "Copper" to indicate kind of Tube wanted. If wanted Nickel-Plated, add the word "Nickel" in	addition to the words Brass or Copper.

If Extra Heavy Iron Pipe Size is wanted, add the word "Heavy."

If wanted Tinned inside and outside, add the word "Tinned" in addition to the words Brass or Copper,

Special lengths would be indicated by a third numeral, using random length code word. The first numeral will indicate the number of lengths, the second the size.

For Example: -Fifty lengths Seamless Brass Tube, 1 inch Iron Pipe Size, regular temper, in 12 foot lengths, would be

expressed by "Fifty, one, Sardine, Brass." For sizes carried in Stock see pages Brass, 98 and 99; Copper, 105.

BRASS AND ADMIRALTY MIXTURE CONDENSER TUBES.

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de Diameter, No	ide Diameter, No.
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ches Outside Diameter, No	ches Outside Diameter, No
Inches Outside Diameter, No	Inches Outside Diameter, No
- Inches Outside Diameter, No	- Inches Outside Diameter, No.
Inches Outside Diameter, No	Inches Outside Diameter, No.
18 Inches Outside Diameter, No	15 Inches Outside Diameter, No.
rths Inches Outside Diameter, No	rths — Inches Outside Diameter, No.
ngths Inches Outside Diameter, No	ngths Inches Outside Diameter, No
engths Inches Outside Diameter, No	engths Inches Outside Diameter, No.
.Lengths Inches Outside Diameter, No	. Lengths — Inches Outside Diameter, No.
Lengths Inches Outside Diameter, No	Lengths Inches Outside Diameter, No.
Lengths Inches Outside Diameter, No	Lengths Inches Outside Diameter, No.
Lengths Inches Outside Diameter, No	Lengths Inches Outside Diameter, No.

CONDENSER TUBES. (Continued.)

Add words "Brass" or "Admiralty" to indicate kind of Tube wanted.

The first numeral will indicate the number of lengths, the second the diameter, the third the gauge number, and the fourth the lengths.

For Example.--Eight hundred lengths Seamless Brass Condenser Tubes, 3/8 outside diameter, No. 18 Stubs' Gauge, tinned inside and outside 12 feet 6 inches long, would be expressed by: "Eight hundred, five-eighths, eighteen, twelve feet six, Saunter, Brass."

For sizes carried in Stock see page 100.

BRAZED BRASS AND COPPER TUBING.

BAILMENT.		BAGGAGE.
Lengths Plain Round Brass — Inches Outside Diameter, No. — B. & S. Gauge, in lengths 12 to BALLS 14 feet long	Lengths Plain Round Copper Inches Outside Diameter, No B. & S. Gauge, in lengths 12	to 14 feet longBAGGAGE.

If Annealed is wanted add the word "Soft."

If Rope Pattern is wanted, add the word "Rope."

The first numeral will indicate the number of lengths, the second the diameter, and the third the gauge number. If special lengths are wanted, add the length after code word.

For Example:—Fifty lengths Plain Round Brazed Brass Tubing, 3% inch Outside Diameter, No. 17 B. & S. Gauge, in 12 to 14 feet lengths, would be expressed by: "Fifty, seven-eighths, seventeen, Bailment." Special lengths would be indicated by a fourth numeral.

For sizes carried in Stock see pages 131 and 132.

COPPER BELT RIVETS AND BURS. LBS., COPPER RIVETS AND BURS.

Length.	No. 5.	No. 6.	No. 7.	No. 8.	No. 9.	No. 10.	No. 12.	No. 13.
77			REGENTESS	REGULARITY	Reinvest	RELATRIX	REMEDIABLE	REMITTER
t to to			REGENTSHIP	REGULATE	REITERATE	RELAX	REMEDIED	REMNANT
100	REFRACTORY	REFU	REGIBLE	REGULATING	REFECTION	RELAXABLE	REMEDILESS	REMODEL
7.	REFRAGABLE	REGAIN	REGICIDAL	REGULAR	REJOICE	RELAXENT	REMEDY	REMODELLED
1/2	REFRAIN	REGAL	REGILD	REGURGLE	REJOICING	RELAXATION	REMEDYING	REMOLTEN
6	REFRAINER	REGALEMENT	REGIME	REHASH	REJOINDER	RELAYING	REMELT	REMORSE
000	REFRESH	REGALIA	REGIMENTAL	REHEARSAL	REJUVENATE	RELEGATE	REMEMBER	REMORSEFUL
3	REFRESHER	REGALITY	REGINALD	REHEARSING	REKINDLE	RELENT	REMIGRATE	REMOTE
100	REFRET		REGION	REIGNING	RELAPSE	RELENTING	REMIND	REMOTELY
1	REFRINGMENT	REFRINGMENT REGARDABLE	REGISTRAR	REIMBODY	RELAPSING	RELENTLESS	REMINDING	REMOTENESS
11/8	REFUGE	REGARDFUL	REGNANT	REINDEER	RELATE	RELEVANT	REMISS	REMOTION
11/4	REFULGENCE	REGETTA	REGRAFT	REINLESS	RETATER	RELEVATION	REMISSIBLE	REMOUNT
11%	REFULGENT	REGENCY	REGRATE	REINS	RETATING	RELIANCE		
Assorted (RENOVATION	RENOWN	RENOWNED	RENTABLE		
Burs Only.	Burs Only. REFUNDING REGENT		REGRET	REINSTATE	RELATIVELY RELICTION	RELICTION	REMITTING	Remover

If Rivets and Burs are wanted in ¼ lb. boxes, add the Word "Quarter" after code word.

If Rivets and Burs are wanted in ½ lb, boxes, add the word "Half" after code word. If Rivets and Burs are wanted in 11b. boxes, add the word "One" after code word.

If Rivers only are wanted add the word "Only" after code word.

For Example:—Five hundred pounds Copper Rivets and Burs No. 8, assorted, 3% to 34 inch, in 35 pound boxes, would be expressed by "Five Hundred Renown, Half."

COPPER RIVETS .- Continued.

No. 9 OVAL HEAD TRUNK RIVETS.

IN 1 LB. BOXES.

Length		Length.	
14 inch 5	REMOVING RENARD RENASCENT RENASCIBLE RENDEZVOUS RENDITION RENEGADE	3/4 inch 7/8 " 1 " 11/8 " 11/4 " 11/2 "	RENEWAL RENEWER RENOUNCE RENOVATE RENTER RENTROLL

For Example:—One hundred pounds one half inch and fifty pounds 34 inch No. 9 Oval Head Copper Rivets would be expressed by: "Hundred, Rendezvous, Fifty, Renewal."

OVAL HEAD COPPER BRAZIERS' RIVETS.

.....LBS., IN 5 LB. OR 50 LB. BOXES.

No. 00 REPACIFY No. 0 REPACK No. 1 REPARTION No. 2 REPARTEE No. 3 REPASS No. 4 REPINE	No. 5 No. 6 No. 7 No. 8 No. 9 No. 10	REPASTURE REPEAL REPEALABLE REPEATER REPEL REPENTANCE
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COPPER NAILS.

....LBS., REGULAR CUT, IN 5 LB. OR 50 LB. BOXES.

Length		Length	
3/4 inch	RELIEVABLE RELIGHT	2½ Inch	RELUCT RELUCTANT
11/	RELIGION RELINGUISH	31/4 "	RELUMINE REMAND
11/2 "	RELINQUARY	4 "	REMARK
13/4 "	Relish Relishable	41/2	REMARKABLE REMISSION
21/ "	RELISHABLE	6 "	REMISSION

For Sizes carried in Stock, see pages 158 to 162,

If wanted in 5 pound paper boxes, add the word "Five" after code word.

If wanted in 50 pound cases, add the word "Bulk" after code word.

For Example:—Two hundred pounds 2-inch Regular Cut Copper Nails, in 50 lb. boxes, would be expressed by: "Two Hundred Relishable Bulk."

U. T. HUNGERFORD BRASS AND COPPER CO.

MEMORANDA

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